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 | NAPP2209041753 |
| District RP | |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party XTO Energy | OGRID 5380 |
| Contact Name Adrian Baker | Contact Telephone 432-236-3808 |
| Contact email adrian.baker@exxonmobil.com | Incident # *(assigned by OCD)* |
| Contact mailing address 6401 Holiday Hill Rd Bldg 5, Midland, Texas, 79707 | |

## Location of Release Source

Latitude 32.54665 Longitude -103.85412
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name BEU 5E Han Solo 114H | Site Type Production Well |
| Date Release Discovered 03/17/2022 | API# *(if applicable)* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| G | 27 | 20S | 31E | Eddy |

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

## Nature and Volume of Release

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

| | | |
|---|---|---|
| ☐ Crude Oil | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Produced Water | Volume Released (bbls) | Volume Recovered (bbls) |
| | Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☒ Other (describe) Produced water w/FR | Volume/Weight Released (provide units) 6.33 BBLS | Volume/Weight Recovered (provide units) 6.00 BBLS |

Cause of Release: Fluids were released to containment and pad when an air actuated valve did not shut all the way while removing hose. All free fluids were recovered with a vacuum trailer. Friction Reducer (FR) SDS will be provided as part of remediation document submitted. A third-party contractor has been retained for remediation purposes.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2209041753 |
| 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?<br>N/A |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?<br>N/A | |

## Initial Response

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

- ☒ 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:

NA

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

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

Printed Name: Adrian Baker  Title: SSHE Coordinator

Signature:   Date: 3/31/22

email: adrian.baker@exxonmobil.com  Telephone: 432-236-3808

**OCD Only**

Received by: Jocelyn Harimon  Date: 03/31/2022

| Location: | BEU 5E Han Solo 114H | |
|---|---|---|
| Spill Date: | 3/17/2022 | |

| Area 1 | | |
|---|---|---|
| Approximate Area = | 33.69 | cu.ft. |
| VOLUME OF LEAK | | |
| Total Crude Oil = | 0.00 | bbls |
| Total Produced Water = | 6.00 | bbls |

| Area 2 | | |
|---|---|---|
| Approximate Area = | 750.00 | sq. ft. |
| Average Saturation (or depth) of spill = | 1.00 | inches |

| | | |
|---|---|---|
| Average Porosity Factor = | 0.03 | |

| VOLUME OF LEAK | | |
|---|---|---|
| Total Crude Oil = | 0.00 | bbls |
| Total Produced Water = | 0.33 | bbls |

| TOTAL VOLUME OF LEAK | | |
|---|---|---|
| **Total Crude Oil =** | **0.00** | **bbls** |
| **Total Produced Water =** | **6.33** | **bbls** |
| **TOTAL VOLUME RECOVERED** | | |
| **Total Crude Oil =** | **0.00** | **bbls** |
| **Total Produced Water =** | **6.00** | **bbls** |

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

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



## CONDITIONS

| | |
|---|---|
| Operator:<br>XTO ENERGY, INC<br>6401 Holiday Hill Road<br>Midland, TX 79707 | OGRID:<br>5380 |
| | Action Number:<br>94807 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jharimon | None | 3/31/2022 |

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2209041753 |
| 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 | NAPP2209041753 |
| District RP | |
| Facility ID | |
| Application ID | |

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

Printed Name: _Garrett Green_____ Title: _Environmental Coordinator_____

Signature:_____ Date: ____08/12/2022_____

email: _garrett.green@exxonmobil.com_____ Telephone: ____575-200-0729_____

**OCD Only**

Received by: ____Jocelyn Harimon_____ Date: 08/12/2022

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2209041753 |
| District RP | |
| Facility ID | |
| Application ID | |

# Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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

Printed Name: Garrett Green Title: Environmental Coordinator

Signature: Garrett Green Date: 08/12/2022

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

**OCD Only**

Received by: Jocelyn Harimon Date: 08/12/2022

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: 09/29/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A

ENSOLUM

August 12, 2022

District II
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

**Re: Closure Request**
**BEU 5E Han Solo 114H**
**Incident Number NAPP2209041753**
**Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this Closure Request to document site assessment, excavation, and soil sampling activities at the BEU 5E Han Solo 114H (Site). The purpose of the site assessment and soil sampling activities was to address impacts to soil following a release of produced water with friction reducer at the Site. Based on the excavation activities and laboratory analytical results from the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting closure for Incident Number NAPP2209041753.

## SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit G, Section 27, Township 20 South, Range 31 East, in Eddy County, New Mexico (32.54665° N, 103.85412°W) and is associated with oil and gas exploration and production operations on Bureau of Land Management (BLM) Federal Land.

On March 17, 2022, an air valve malfunctioned while removing a hose resulting in the release of 6.33 barrels (bbls) of produced water, treated with friction reducer, into the temporary lined containment and onto the surface of the well pad. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; approximately 6 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on March 31, 2022. The release was assigned Incident Number NAPP2209041753.

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

## SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized according to Table 1, 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 50 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 United States Geological Survey (USGS) well 323307103503901, located approximately 0.6 miles northeast of the Site. The groundwater well has a reported depth to groundwater of 77 feet bgs and a total depth of 156 feet bgs. Ground surface elevation at the groundwater well location is 3,510 feet above mean sea level (amsl), which is approximately 16 feet lower in elevation than the Site. 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 an unnamed dry wash, located approximately 8,043 feet northeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table 1 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

## SITE ASSESSMENT ACTIVITIES

On April 18, 2022, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Three preliminary soil samples (SS01 through SS03) were collected within the release extent from a depth of approximately 0. 5 feet bgs to assess the lateral extent of the impacted soil. The preliminary soil samples were field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation 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 at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of 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 preliminary soil samples SS01 and SS02 indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results for preliminary soil sample SS03 indicated TPH-GRO/TPH-DRO and TPH concentrations exceed the Closure Criteria. Based on visible staining in the release area, elevated field screening results, and laboratory analytical results for the preliminary soil samples, delineation and excavation activities were warranted.

## DELINEATION AND EXCAVATION SOIL SAMPLING ACTIVITIES

On May 31, 2022, Ensolum personnel were at the Site to oversee delineation and excavation activities. Four potholes (PH01 through PH04) were advanced via backhoe within the release extent and at the location of the temporary lined containment to a depth of 2 feet bgs. Delineation soil samples were collected from each pothole at depths of 1-foot and 2 feet bgs. In addition, four lateral delineation soil samples (SS04 through SS07) were collected around the visible release extent from a depth of 0.5 feet bgs to confirm the lateral extent of the release. Soil from the delineation activities was field screened for volatile aromatic hydrocarbons and chloride using a PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The potholes and lateral delineation soil sample locations are depicted on Figure 3.

Laboratory analytical results for delineation pothole soil samples PH01/PH01A through PH04/PH04A and lateral delineation soil samples SS04 through SS07 indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations are compliant with the Closure Criteria and compliant with the most stringent Table 1 Closure Criteria.

Impacted soil was excavated from the release area as indicated by visible staining, field screening activities, and laboratory analytical results for the preliminary soil samples. Excavation activities were performed using a backhoe and transport vehicle. The excavation occurred on the well pad. To direct excavation activities, Ensolum personnel screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively.

Following removal of impacted soil, Ensolum personnel collected 5-point composite soil samples representing 200 square feet from the floor 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 FS04 were collected from the floor of the excavation at a depth of 0.75 feet bgs. Due to the shallow depth of the excavation, soil from the sidewalls was incorporated into the floor sample. Due to staining near FS04, additional soil was removed from this area and subsequent sample FS04A was collected. The excavation 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 4.

The final excavation extent measured approximately 810 square feet. A total of approximately 25 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Carlsbad, New Mexico. After completion of confirmation sampling, the excavation areas were secured with fencing.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for the excavation floor soil samples FS01 through FS03 and FS04A, collected from the final excavation extent, indicated benzene, BTEX, TPH-DRO/TPH-GRO, TPH, and chloride concentrations were compliant with the Closure Criteria and compliant with the most stringent

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

## CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the March 17, 2022, release of produced water with friction reducer. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria and compliant with the most stringent Table 1 Closure Criteria. Based on the soil sample analytical results, no further remediation was required. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions.

Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been estimated to be between 50 and 100 feet bgs and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2209041753.

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

Sincerely,
**Ensolum, LLC**

Kalei Jennings
Senior Scientist

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

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

Appendices:

| | |
|---|---|
| Figure 1 | Site Receptor Map |
| Figure 2 | Preliminary Soil Sample Locations |
| Figure 3 | Delineation Soil Sample Locations |
| Figure 4 | Excavation Soil Sample Locations |
| Table 1 | Soil Sample Analytical Results |
| Appendix A | Referenced Well Records |
| Appendix B | Photographic Log |
| Appendix C | Lithologic / Soil Sampling Logs |
| Appendix D | Laboratory Analytical Reports & Chain-of-Custody Documentation |
| Appendix E | NMOCD Notifications |
| Appendix F | SDS for Friction Reducer |

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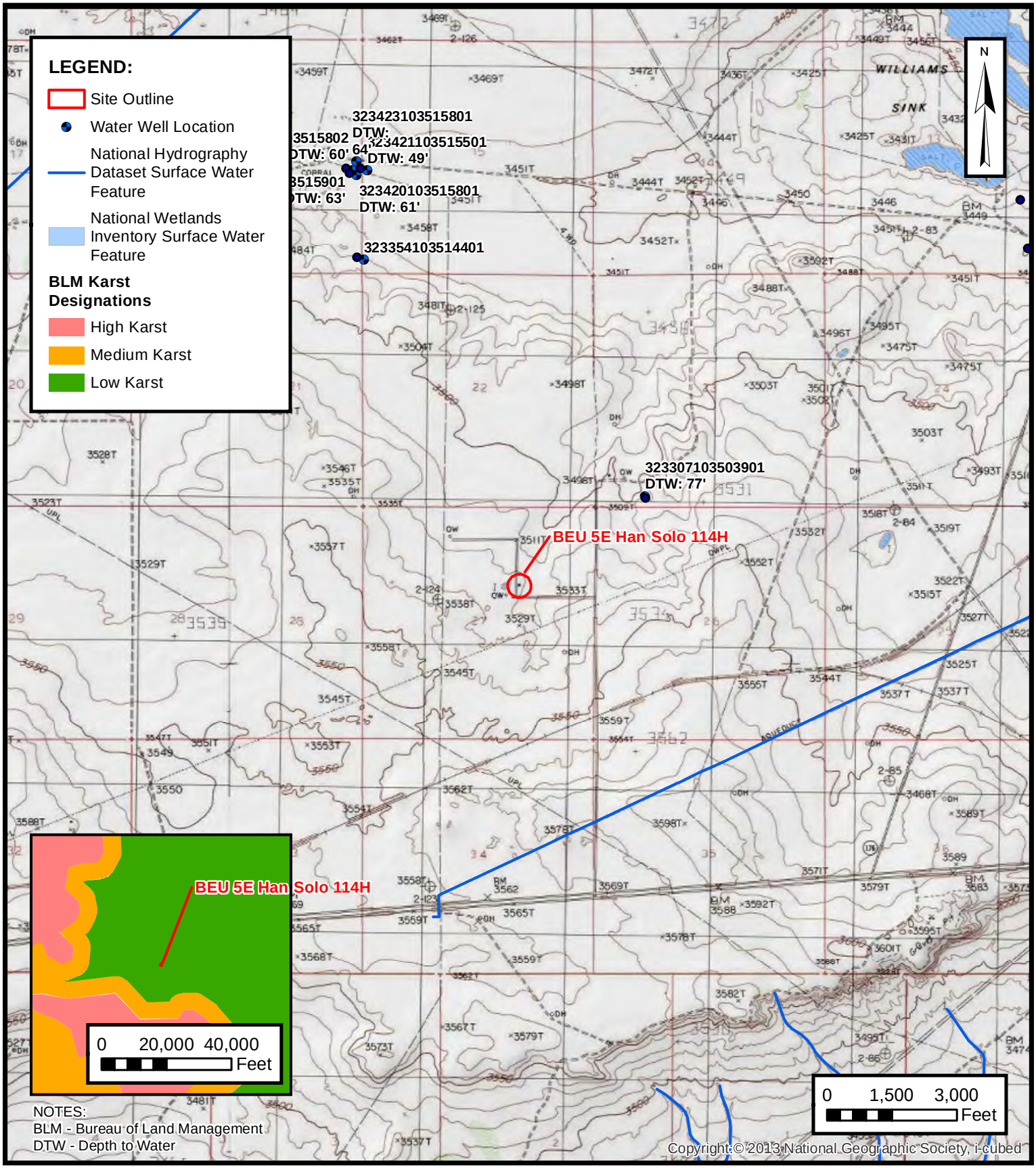
# FIGURES

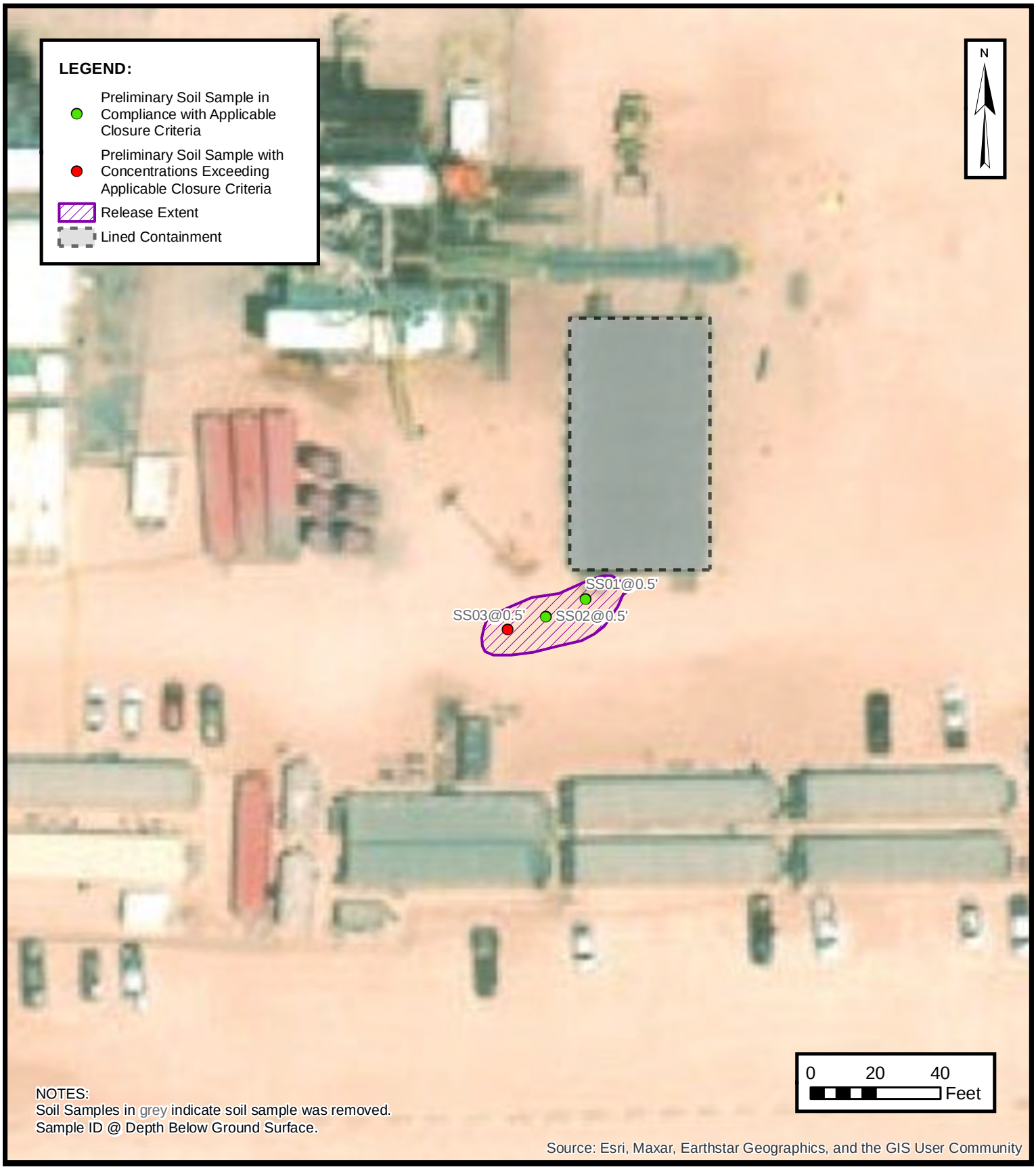



ENSOLUM
Environmental & Hydrogeologic Consultants

**SITE RECEPTOR MAP**

XTO ENERGY, INC
BEU 5E HAN SOLO 114H
NAPP2209041753
Unit G, Sec 27, T20S, R31E
Eddy County, New Mexico

**FIGURE**
**1**

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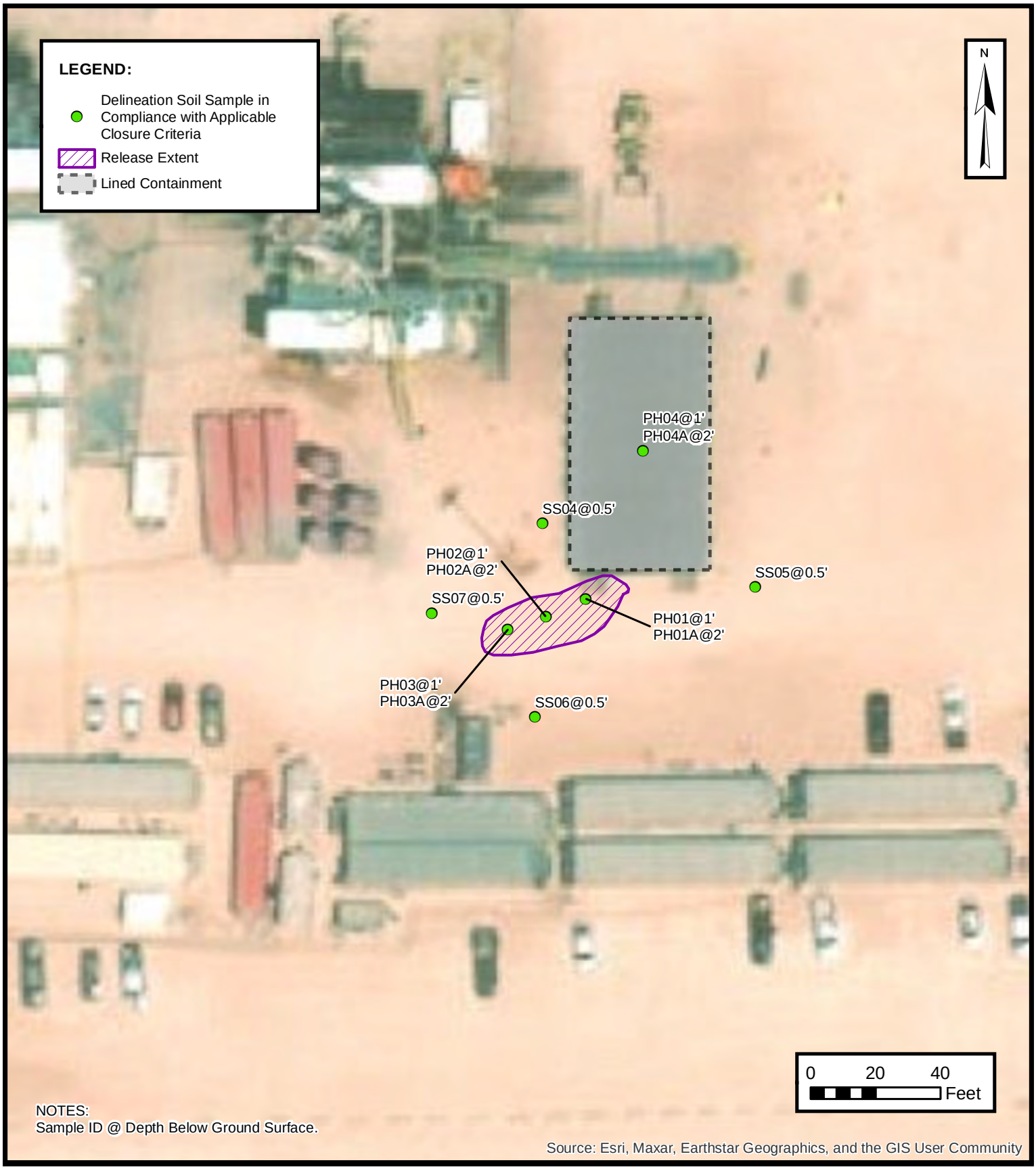
**PRELIMINARY SOIL SAMPLE LOCATIONS**

XTO ENERGY, INC
BEU 5E HAN SOLO 114H
NAPP2209041753
Unit G, Sec 27, T20S, R31E
Eddy County, New Mexico

**FIGURE**
**2**

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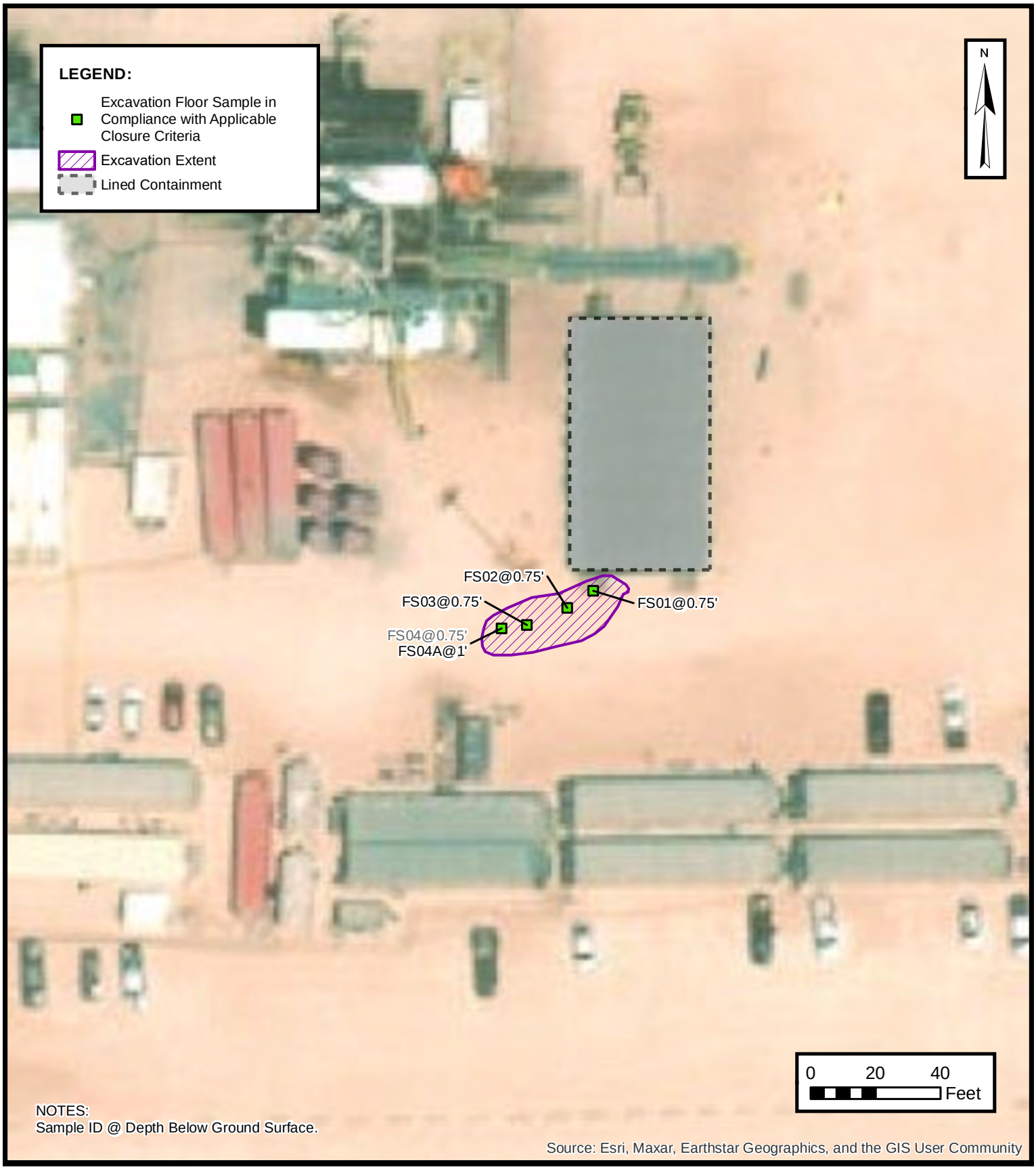
Environmental & Hydrogeologic Consultants

**DELINEATION SOIL SAMPLE LOCATIONS**

XTO ENERGY, INC
BEU 5E HAN SOLO 114H
NAPP2209041753
Unit G, Sec 27, T20S, R31E
Eddy County, New Mexico

**FIGURE**
**3**




ENSOLUM
Environmental & Hydrogeologic Consultants

**EXCAVATION SOIL SAMPLE LOCATIONS**

XTO ENERGY, INC
BEU 5E HAN SOLO 114H
NAPP2135442784
Unit G, Sec 27, T20S, R31E
Eddy County, New Mexico

**FIGURE**
**4**

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# TABLES

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**TABLE 1**
**SOIL SAMPLE ANALYTICAL RESULTS**
**BEU 5E Han Solo 114H**
**XTO Energy, Inc.**
**Eddy County, New Mexico**

| Sample I.D. | Sample Date | Sample Depth (feet bgs) | Benzene (mg/kg) | Total BTEX (mg/kg) | TPH GRO (mg/kg) | TPH DRO (mg/kg) | TPH ORO (mg/kg) | GRO+DRO (mg/kg) | Total TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| NMOCD Table 1 Closure Criteria (NMAC 19.15.29) | | | 10 | 50 | NE | NE | NE | 1,000 | 2,500 | 10,000 |
| **Preliminary Assessment Soil Samples** | | | | | | | | | | |
| SS01 | 04/18/2022 | 0.5 | <0.00202 | <0.00404 | <50.0 | 361 | 295 | 361 | 656 | 408 |
| SS02 | 04/18/2022 | 0.5 | <0.00200 | <0.00401 | <50.0 | 985 | 420 | 985 | 1,410 | 847 |
| SS03 | 04/18/2022 | 0.5 | <0.00199 | <0.00398 | <250 | 2,830 | 5,210 | **2,830** | **8,040** | 534 |
| **Delinaetion Soil Samples** | | | | | | | | | | |
| PH01 | 05/31/2022 | 1 | <0.00201 | 0.0216 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 28.9 |
| PH01A | 05/31/2022 | 2 | <0.00202 | <0.00404 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 46.6 |
| PH02 | 05/31/2022 | 1 | <0.00200 | <0.00401 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 73.3 |
| PH02A | 05/31/2022 | 2 | <0.00202 | 0.0111 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 513 |
| PH03 | 05/31/2022 | 1 | <0.00200 | 0.00889 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 324 |
| PH03A | 05/31/2022 | 2 | <0.00200 | 0.00979 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 173 |
| PH04 | 05/31/2022 | 1 | <0.00201 | <0.00402 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | 16.8 |
| PH04A | 05/31/2022 | 2 | <0.00202 | 0.00783 | <49.9 | 81.4 | <49.9 | 81.4 | 81.4 | 70 |
| SS04 | 05/31/2022 | 0.5 | <0.00199 | <0.00398 | <50.0 | 58.2 | <50.0 | 58.2 | 58.2 | 270 |
| SS05 | 05/31/2022 | 0.5 | <0.00198 | 0.045 | 66.9 | <50.0 | <50.0 | 66.9 | 66.9 | 187 |
| SS06 | 05/31/2022 | 0.5 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 487 |
| SS07 | 05/31/2022 | 0.5 | <0.00199 | 0.00505 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 166 |
| **Excavation Floor Soil Samples** | | | | | | | | | | |
| FS01 | 05/31/2022 | 0.75 | <0.00200 | 0.0143 | <50.0 | 57.3 | <50.0 | 57.3 | 57.3 | 443 |
| FS02 | 05/31/2022 | 0.75 | <0.00200 | 0.0151 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 500 |
| FS03 | 05/31/2022 | 0.75 | <0.00200 | 0.0233 | <49.8 | 67 | <49.8 | 67.0 | 67.0 | 231 |
| FS04 | 05/31/2022 | 0.75 | <0.00200 | 0.0058 | <50.0 | 1,540 | <50.0 | **1,540** | 1,540 | 490 |
| FS04A | 05/31/2022 | 1 | <0.00198 | <0.00397 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 91.7 |

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

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# APPENDIX A

## Referenced Well Records

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

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

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

## Search Results -- 1 sites found

**site_no list =**

- 323307103503901

**Minimum number of levels =** 1

Save file of selected sites to local disk for future upload

---

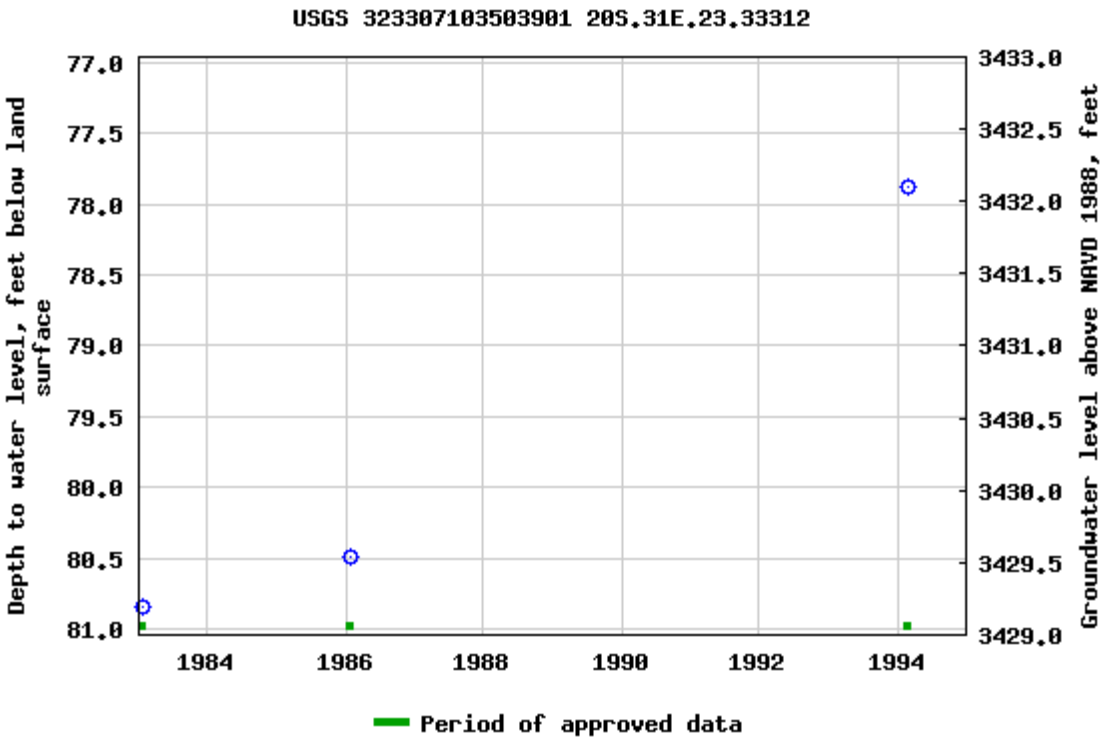
## USGS 323307103503901 20S.31E.23.33312

Available data for this site | Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°33'07", Longitude 103°50'39" NAD27
Land-surface elevation 3,510 feet above NAVD88
The depth of the well is 156 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

**Output formats**

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




Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

---

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News



**Title: Groundwater for USA: Water Levels**
**URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?**

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2022-08-11 18:07:52 EDT
0.68 0.52 nadww01

Click to hideNews Bulletins

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

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

## Search Results -- 1 sites found

**Agency code =** usgs
**site_no list =**
- 323307103503901

**Minimum number of levels =** 1
Save file of selected sites to local disk for future upload

## USGS 323307103503901 20S.31E.23.33312

Eddy County, New Mexico
Latitude 32°33'07", Longitude 103°50'39" NAD27
Land-surface elevation 3,510 feet above NAVD88
The depth of the well is 156 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

**Output formats**

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

| Date | Time | ? Water-level date-time accuracy | ? Parameter code | Water level, feet below land surface | Water level, feet above specific vertical datum | Referenced vertical datum | ? Status | ? Method of measurement | ? Measuring agency | ? Source measu |
|---|---|---|---|---|---|---|---|---|---|---|
| 1983-01-20 | | D | 62610 | | 3427.56 | NGVD29 | 1 | Z | | |
| 1983-01-20 | | D | 62611 | | 3429.16 | NAVD88 | 1 | Z | | |
| 1983-01-20 | | D | 72019 | 80.84 | | | 1 | Z | | |
| 1986-01-22 | | D | 62610 | | 3427.91 | NGVD29 | 1 | Z | | |
| 1986-01-22 | | D | 62611 | | 3429.51 | NAVD88 | 1 | Z | | |
| 1986-01-22 | | D | 72019 | 80.49 | | | 1 | Z | | |
| 1994-03-02 | | D | 62610 | | 3430.52 | NGVD29 | 1 | S | | |
| 1994-03-02 | | D | 62611 | | 3432.12 | NAVD88 | 1 | S | | |
| 1994-03-02 | | D | 72019 | 77.88 | | | 1 | S | | |

**Explanation**

| Section | Code | Description |
|---|---|---|
| Water-level date-time accuracy | D | Date is accurate to the Day |
| Parameter code | 62610 | Groundwater level above NGVD 1929, feet |
| Parameter code | 62611 | Groundwater level above NAVD 1988, feet |

| Section | Code | Description |
|---|---|---|
| Parameter code | 72019 | Depth to water level, feet below land surface |
| Referenced vertical datum | NAVD88 | North American Vertical Datum of 1988 |
| Referenced vertical datum | NGVD29 | National Geodetic Vertical Datum of 1929 |
| Status | 1 | Static |
| Method of measurement | S | Steel-tape measurement. |
| Method of measurement | Z | Other. |
| Measuring agency | | Not determined |
| Source of measurement | | Not determined |
| Water-level approval status | A | Approved for publication -- Processing and review completed. |

---

# New Mexico Office of the State Engineer
# Water Right Summary

get image list

**WR File Number:** CP 00370 **Subbasin:** CP **Cross Reference:** -

**Primary Purpose:** DOM 72-12-1 DOMESTIC ONE HOUSEHOLD

**Primary Status:** PMT PERMIT

**Total Acres:** **Subfile:** - **Header:** -

**Total Diversion:** 3 **Cause/Case:** -

**Owner:** BALLARD & BONFIELD

**Documents on File**

| | Trn # | Doc | File/Act | Status 1 | Status 2 | Transaction Desc. | From/ To | Acres | Diversion | Consumptive |
|---|---|---|---|---|---|---|---|---|---|---|
| get images | 473010 | 72121 | 1966-07-06 | PMT | LOG | CP 00370 | T | | 3 | |

**Current Points of Diversion**

(NAD83 UTM in meters)

| POD Number | Well Tag | Source | Q 64 | Q16 | Q4 | Sec | Tws | Rng | X | Y | Other Location Desc |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CP 00370 | | Shallow | | 1 | 1 | 36 | 20S | 31E | 609945 | 3600358* | |

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

*New Mexico Office of the State Engineer*

# Point of Diversion Summary

| Well Tag | POD Number | (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64 | Q16 | Q4 | Sec | Tws | Rng | (NAD83 UTM in meters) X | Y |
|---|---|---|---|---|---|---|---|---|---|
| | CP 00370 | 1 | 1 | | 36 | 20S | 31E | 609945 | 3600358* |

| | | | | | |
|---|---|---|---|---|---|
| **Driller License:** | 30 | **Driller Company:** | BARRON, EMMETT | | |
| **Driller Name:** | BARRON, EMMETT | | | | |
| **Drill Start Date:** | 07/11/1966 | **Drill Finish Date:** | 07/14/1966 | **Plug Date:** | |
| **Log File Date:** | 10/11/1966 | **PCW Rcv Date:** | | **Source:** | Shallow |
| **Pump Type:** | | **Pipe Discharge Size:** | | **Estimated Yield:** | |
| **Casing Size:** | | **Depth Well:** | 120 feet | **Depth Water:** | 80 feet |

| Water Bearing Stratifications: | Top | Bottom | Description |
|---|---|---|---|
| | 75 | 80 | Sandstone/Gravel/Conglomerate |

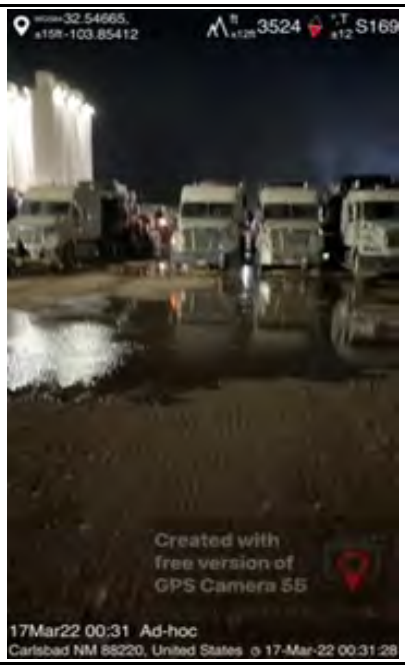
***UTM location was derived from PLSS - see Help**

ENSOLUM

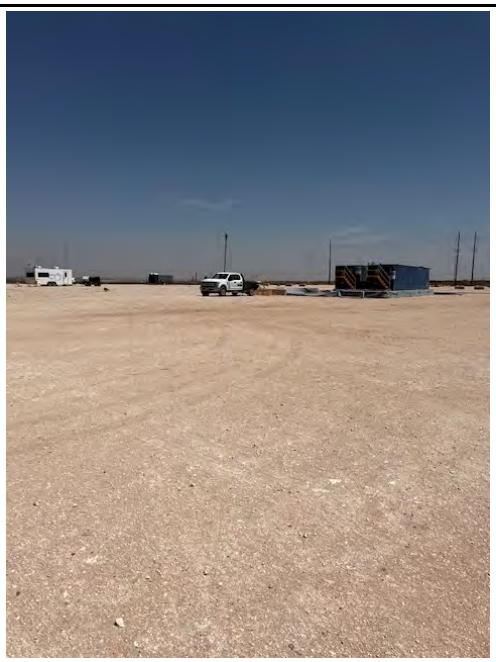
# APPENDIX B

## Photographic Log

**Photographic Log**
XTO Energy, Inc.
BEU 5E Han Solo 114H
Incident Number NAPP2209041753




Photograph 1 Date: 03/17/2022
Description: View of release area.



Photograph 2 Date: 04/18/2022
Description: View of staining observed during initial site assessment.

Photograph 3 Date: 05/31/2022
Description: Northwest view of final excavation.

Photograph 4 Date: 05/31/2022
Description: North view of final excavation.

ENSOLUM

# APPENDIX C

## Lithologic / Soil Sampling Logs

| ENSOLUM | Sample Name: PH01 | Date: 05/31/2022 |
|---|---|---|
| | Site Name: BEU 5E Han Solo 114H | |
| | Incident Number: NAPP2209041753 | |
| | Job Number: 03E1558021 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: Conner Shore | Method: Backhoe |
| Coordinates: | Hole Diameter: | Total Depth: 2' |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| N | <179.2 | 1.6 | N | PH01 | 1' | 1' | cche | Caliche |
| N | <179.2 | 3.3 | N | PH01 | 2' | 2' | sp-sm | well graded Caliche with some red brown sandstone |

| ENSOLUM | Sample Name: PH02 | Date: 05/31/2022 |
|---|---|---|
| | Site Name: BEU 5E Han Solo 114H | |
| | Incident Number: NAPP2209041753 | |
| | Job Number: 03E1558021 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: Conner Shore | Method: Backhoe |
| Coordinates: | Hole Diameter: | Total Depth: 3' |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| N | <179.2 | 0.3 | N | PH02 | 1' | 1' | cche | Caliche |
| N | 560 | 0.3 | N | PH02 | 2' | 2' | sp-sm | well graded Caliche with some red brown sandstone |
| N | <179.2 | 0.3 | N | PH02 | 3' | 3' | sp-sm | well graded Caliche with some red brown sandstone |

| ENSOLUM | Sample Name: PH03 | Date: 05/31/2022 |
|---|---|---|
| | Site Name: BEU 5E Han Solo 114H | |
| | Incident Number: NAPP2209041753 | |
| | Job Number: 03E1558021 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: Conner Shore | Method: Backhoe |
| Coordinates: | Hole Diameter: | Total Depth: 2' |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| N | 392 | 1.0 | N | PH03 | 1' | 1' | cche | Caliche |
| N | 212 | 0.2 | N | PH03 | 2' | 2' | sp-sm | well graded Caliche with some red brown sandstone |

ENSOLUM

# APPENDIX D

## Laboratory Analytical Reports &

## Chain of Custody Documentation

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2209-1
Laboratory Sample Delivery Group: 03E1558021
Client Project/Site: BEU 5E HON SOLO 114H

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*4/25/2022 10:28:27 AM*

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



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

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

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Laboratory Job ID: 890-2209-1
SDG: 03E1558021

# Table of Contents

# Definitions/Glossary

Client: Ensolum Job ID: 890-2209-1
Project/Site: BEU 5E HON SOLO 114H SDG: 03E1558021

## 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 |
|---|---|
| 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: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## Job ID: 890-2209-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2209-1**

**Receipt**
The samples were received on 4/19/2022 4:26 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 3.6°C

**GC VOA**
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-23940 and analytical batch 880-23883 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-2207-A-1-D) and (890-2207-A-1-F MSD). Evidence of matrix interferences is not obvious.

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

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

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## Client Sample ID: SS01

**Lab Sample ID: 890-2209-1**
**Matrix: Solid**
**Date Collected: 04/18/22 11:20**
**Date Received: 04/19/22 16:26**
**Sample Depth: 0.5**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.00202 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 01:43 | 1 |
| Toluene | <0.00202 | U | 0.00202 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 01:43 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 01:43 | 1 |
| m-Xylene & p-Xylene | <0.00404 | U | 0.00404 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 01:43 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 01:43 | 1 |
| Xylenes, Total | <0.00404 | U | 0.00404 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 01:43 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *04/21/22 11:35* | *04/22/22 01:43* | *1* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* | *04/21/22 11:35* | *04/22/22 01:43* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00404 | U | 0.00404 | | mg/Kg | | | 04/22/22 11:18 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **656** | | 50.0 | | mg/Kg | | | 04/25/22 09:06 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:56 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **361** | | 50.0 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:56 | 1 |
| **Oil Range Organics (Over C28-C36)** | **295** | | 50.0 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *109* | | *70 - 130* | *04/21/22 13:45* | *04/23/22 07:56* | *1* |
| *o-Terphenyl* | *106* | | *70 - 130* | *04/21/22 13:45* | *04/23/22 07:56* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **408** | | 5.02 | | mg/Kg | | | 04/21/22 19:15 | 1 |

## Client Sample ID: SS02

**Lab Sample ID: 890-2209-2**
**Matrix: Solid**
**Date Collected: 04/18/22 11:25**
**Date Received: 04/19/22 16:26**
**Sample Depth: 0.5**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:05 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:05 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:05 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:05 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:05 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:05 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## Client Sample ID: SS02

**Date Collected: 04/18/22 11:25**
**Date Received: 04/19/22 16:26**
**Sample Depth: 0.5**

**Lab Sample ID: 890-2209-2**
**Matrix: Solid**

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *70 - 130* | *04/21/22 11:35* | *04/22/22 03:05* | *1* |
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* | *04/21/22 11:35* | *04/22/22 03:05* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | | mg/Kg | | | 04/22/22 11:18 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **1410** | | 50.0 | | mg/Kg | | | 04/25/22 09:06 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:34 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **985** | | 50.0 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:34 | 1 |
| **Oil Range Organics (Over C28-C36)** | **420** | | 50.0 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:34 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *121* | | *70 - 130* | *04/21/22 13:45* | *04/23/22 07:34* | *1* |
| *o-Terphenyl* | *118* | | *70 - 130* | *04/21/22 13:45* | *04/23/22 07:34* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **847** | | 5.04 | | mg/Kg | | | 04/21/22 19:43 | 1 |

## Client Sample ID: SS03

**Date Collected: 04/18/22 11:40**
**Date Received: 04/19/22 16:26**
**Sample Depth: 0.5**

**Lab Sample ID: 890-2209-3**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:26 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:26 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:26 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:26 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:26 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 04/21/22 11:35 | 04/22/22 03:26 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* | *04/21/22 11:35* | *04/22/22 03:26* | *1* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* | *04/21/22 11:35* | *04/22/22 03:26* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 04/22/22 11:18 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## Client Sample ID: SS03

**Date Collected: 04/18/22 11:40**
**Date Received: 04/19/22 16:26**
**Sample Depth: 0.5**

## Lab Sample ID: 890-2209-3

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **8040** | | 250 | | mg/Kg | | | 04/25/22 09:06 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <250 | U | 250 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:13 | 5 |
| **Diesel Range Organics (Over C10-C28)** | **2830** | | 250 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:13 | 5 |
| **Oil Range Organics (Over C28-C36)** | **5210** | | 250 | | mg/Kg | | 04/21/22 13:45 | 04/23/22 07:13 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *104* | | *70 - 130* | *04/21/22 13:45* | *04/23/22 07:13* | *5* |
| *o-Terphenyl* | *94* | | *70 - 130* | *04/21/22 13:45* | *04/23/22 07:13* | *5* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **534** | | 5.02 | | mg/Kg | | | 04/21/22 20:10 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## 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) |
| 890-2207-A-1-A MS | Matrix Spike | 106 | 100 |
| 890-2207-A-1-B MSD | Matrix Spike Duplicate | 107 | 102 |
| 890-2209-1 | SS01 | 108 | 101 |
| 890-2209-2 | SS02 | 112 | 96 |
| 890-2209-3 | SS03 | 110 | 101 |
| LCS 880-23940/1-A | Lab Control Sample | 106 | 103 |
| LCSD 880-23940/2-A | Lab Control Sample Dup | 104 | 101 |
| MB 880-23898/5-A | Method Blank | 101 | 97 |
| MB 880-23940/5-A | Method Blank | 99 | 91 |

**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) |
| 890-2207-A-1-E MS | Matrix Spike | 110 | 108 |
| 890-2207-A-1-F MSD | Matrix Spike Duplicate | 133 S1+ | 128 |
| 890-2209-1 | SS01 | 109 | 106 |
| 890-2209-2 | SS02 | 121 | 118 |
| 890-2209-3 | SS03 | 104 | 94 |
| LCS 880-23941/2-A | Lab Control Sample | 115 | 109 |
| LCSD 880-23941/3-A | Lab Control Sample Dup | 116 | 113 |
| MB 880-23941/1-A | Method Blank | 113 | 125 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-23898/5-A**
**Matrix: Solid**
**Analysis Batch: 23883**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 23898**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 09:32 | 04/21/22 11:41 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 09:32 | 04/21/22 11:41 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 09:32 | 04/21/22 11:41 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 04/21/22 09:32 | 04/21/22 11:41 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 09:32 | 04/21/22 11:41 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 04/21/22 09:32 | 04/21/22 11:41 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | *04/21/22 09:32* | *04/21/22 11:41* | *1* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* | *04/21/22 09:32* | *04/21/22 11:41* | *1* |

**Lab Sample ID: MB 880-23940/5-A**
**Matrix: Solid**
**Analysis Batch: 23883**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 23940**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 11:35 | 04/21/22 22:17 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 11:35 | 04/21/22 22:17 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 11:35 | 04/21/22 22:17 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 04/21/22 11:35 | 04/21/22 22:17 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 04/21/22 11:35 | 04/21/22 22:17 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 04/21/22 11:35 | 04/21/22 22:17 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *04/21/22 11:35* | *04/21/22 22:17* | *1* |
| *1,4-Difluorobenzene (Surr)* | *91* | | *70 - 130* | *04/21/22 11:35* | *04/21/22 22:17* | *1* |

**Lab Sample ID: LCS 880-23940/1-A**
**Matrix: Solid**
**Analysis Batch: 23883**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 23940**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1005 | | mg/Kg | | 100 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09886 | | mg/Kg | | 99 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09908 | | mg/Kg | | 99 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2021 | | mg/Kg | | 101 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1023 | | mg/Kg | | 102 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: LCSD 880-23940/2-A**
**Matrix: Solid**
**Analysis Batch: 23883**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 23940**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09617 | | mg/Kg | | 96 | 70 - 130 | 4 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

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

**Lab Sample ID: LCSD 880-23940/2-A**
**Matrix: Solid**
**Analysis Batch: 23883**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 23940**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.09442 | | mg/Kg | | 94 | 70 - 130 | 5 | 35 |
| Ethylbenzene | | | 0.100 | 0.09448 | | mg/Kg | | 94 | 70 - 130 | 5 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1923 | | mg/Kg | | 96 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.09722 | | mg/Kg | | 97 | 70 - 130 | 5 | 35 |

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

**Lab Sample ID: 890-2207-A-1-A MS**
**Matrix: Solid**
**Analysis Batch: 23883**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 23940**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.101 | 0.1025 | | mg/Kg | | 102 | 70 - 130 |
| Toluene | <0.00201 | U | 0.101 | 0.09214 | | mg/Kg | | 91 | 70 - 130 |
| Ethylbenzene | <0.00201 | U F2 F1 | 0.101 | 0.07746 | | mg/Kg | | 77 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U F1 | 0.202 | 0.1606 | | mg/Kg | | 80 | 70 - 130 |
| o-Xylene | <0.00201 | U F1 | 0.101 | 0.07856 | | mg/Kg | | 78 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: 890-2207-A-1-B MSD**
**Matrix: Solid**
**Analysis Batch: 23883**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 23940**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0994 | 0.09413 | | mg/Kg | | 95 | 70 - 130 | 9 | 35 |
| Toluene | <0.00201 | U | 0.0994 | 0.08168 | | mg/Kg | | 82 | 70 - 130 | 12 | 35 |
| Ethylbenzene | <0.00201 | U F2 F1 | 0.0994 | 0.03017 | F2 F1 | mg/Kg | | 30 | 70 - 130 | 88 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U F1 | 0.199 | 0.1354 | F1 | mg/Kg | | 68 | 70 - 130 | 17 | 35 |
| o-Xylene | <0.00201 | U F1 | 0.0994 | 0.06657 | F1 | mg/Kg | | 67 | 70 - 130 | 17 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

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

**Lab Sample ID: MB 880-23941/1-A**
**Matrix: Solid**
**Analysis Batch: 24009**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 23941**

| 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 | | 04/21/22 13:45 | 04/22/22 23:02 | 1 |

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# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-23941/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 24009** — **Prep Batch: 23941**

| 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 | | 04/21/22 13:45 | 04/22/22 23:02 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 04/21/22 13:45 | 04/22/22 23:02 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *113* | | *70 - 130* | *04/21/22 13:45* | *04/22/22 23:02* | *1* |
| *o-Terphenyl* | *125* | | *70 - 130* | *04/21/22 13:45* | *04/22/22 23:02* | *1* |

**Lab Sample ID: LCS 880-23941/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 24009** — **Prep Batch: 23941**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 921.4 | | mg/Kg | | 92 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1216 | | mg/Kg | | 122 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *115* | | *70 - 130* |
| *o-Terphenyl* | *109* | | *70 - 130* |

**Lab Sample ID: LCSD 880-23941/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 24009** — **Prep Batch: 23941**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 953.6 | | mg/Kg | | 95 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1108 | | mg/Kg | | 111 | 70 - 130 | 9 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *116* | | *70 - 130* |
| *o-Terphenyl* | *113* | | *70 - 130* |

**Lab Sample ID: 890-2207-A-1-E MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 24009** — **Prep Batch: 23941**

| 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 | 1000 | 947.1 | | mg/Kg | | 93 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 1000 | 961.1 | | mg/Kg | | 96 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *110* | | *70 - 130* |
| *o-Terphenyl* | *108* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

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

**Lab Sample ID: 890-2207-A-1-F MSD**
**Matrix: Solid**
**Analysis Batch: 24009**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 23941**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 998 | 1157 | | mg/Kg | | 114 | 70 - 130 | 20 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 998 | 1177 | | mg/Kg | | 118 | 70 - 130 | 20 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *133* | *S1+* | *70 - 130* |
| *o-Terphenyl* | *128* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-23900/1-A**
**Matrix: Solid**
**Analysis Batch: 23991**

**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 | | | 04/21/22 18:48 | 1 |

**Lab Sample ID: LCS 880-23900/2-A**
**Matrix: Solid**
**Analysis Batch: 23991**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 245.8 | | mg/Kg | | 98 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-23900/3-A**
**Matrix: Solid**
**Analysis Batch: 23991**

**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 | 245.1 | | mg/Kg | | 98 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-2209-1 MS**
**Matrix: Solid**
**Analysis Batch: 23991**

**Client Sample ID: SS01**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 408 | | 251 | 654.5 | | mg/Kg | | 98 | 90 - 110 | | |

**Lab Sample ID: 890-2209-1 MSD**
**Matrix: Solid**
**Analysis Batch: 23991**

**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 | 408 | | 251 | 641.7 | | mg/Kg | | 93 | 90 - 110 | 2 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## GC VOA

### Analysis Batch: 23883

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Total/NA | Solid | 8021B | 23940 |
| 890-2209-2 | SS02 | Total/NA | Solid | 8021B | 23940 |
| 890-2209-3 | SS03 | Total/NA | Solid | 8021B | 23940 |
| MB 880-23898/5-A | Method Blank | Total/NA | Solid | 8021B | 23898 |
| MB 880-23940/5-A | Method Blank | Total/NA | Solid | 8021B | 23940 |
| LCS 880-23940/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 23940 |
| LCSD 880-23940/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 23940 |
| 890-2207-A-1-A MS | Matrix Spike | Total/NA | Solid | 8021B | 23940 |
| 890-2207-A-1-B MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 23940 |

### Prep Batch: 23898

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-23898/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 23940

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Total/NA | Solid | 5035 | |
| 890-2209-2 | SS02 | Total/NA | Solid | 5035 | |
| 890-2209-3 | SS03 | Total/NA | Solid | 5035 | |
| MB 880-23940/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-23940/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-23940/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2207-A-1-A MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-2207-A-1-B MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 24033

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Total/NA | Solid | Total BTEX | |
| 890-2209-2 | SS02 | Total/NA | Solid | Total BTEX | |
| 890-2209-3 | SS03 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 23941

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Total/NA | Solid | 8015NM Prep | |
| 890-2209-2 | SS02 | Total/NA | Solid | 8015NM Prep | |
| 890-2209-3 | SS03 | Total/NA | Solid | 8015NM Prep | |
| MB 880-23941/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-23941/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-23941/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2207-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2207-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 24009

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Total/NA | Solid | 8015B NM | 23941 |
| 890-2209-2 | SS02 | Total/NA | Solid | 8015B NM | 23941 |
| 890-2209-3 | SS03 | Total/NA | Solid | 8015B NM | 23941 |
| MB 880-23941/1-A | Method Blank | Total/NA | Solid | 8015B NM | 23941 |
| LCS 880-23941/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 23941 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## GC Semi VOA (Continued)

### Analysis Batch: 24009 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSD 880-23941/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 23941 |
| 890-2207-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015B NM | 23941 |
| 890-2207-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 23941 |

### Analysis Batch: 24125

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Total/NA | Solid | 8015 NM | |
| 890-2209-2 | SS02 | Total/NA | Solid | 8015 NM | |
| 890-2209-3 | SS03 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 23900

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Soluble | Solid | DI Leach | |
| 890-2209-2 | SS02 | Soluble | Solid | DI Leach | |
| 890-2209-3 | SS03 | Soluble | Solid | DI Leach | |
| MB 880-23900/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-23900/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-23900/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-2209-1 MS | SS01 | Soluble | Solid | DI Leach | |
| 890-2209-1 MSD | SS01 | Soluble | Solid | DI Leach | |

### Analysis Batch: 23991

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Soluble | Solid | 300.0 | 23900 |
| 890-2209-2 | SS02 | Soluble | Solid | 300.0 | 23900 |
| 890-2209-3 | SS03 | Soluble | Solid | 300.0 | 23900 |
| MB 880-23900/1-A | Method Blank | Soluble | Solid | 300.0 | 23900 |
| LCS 880-23900/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 23900 |
| LCSD 880-23900/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 23900 |
| 890-2209-1 MS | SS01 | Soluble | Solid | 300.0 | 23900 |
| 890-2209-1 MSD | SS01 | Soluble | Solid | 300.0 | 23900 |

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## Client Sample ID: SS01

**Lab Sample ID: 890-2209-1**

**Date Collected: 04/18/22 11:20**
**Matrix: Solid**
**Date Received: 04/19/22 16:26**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.95 g | 5 mL | 23940 | 04/21/22 11:35 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | | | 23883 | 04/22/22 01:43 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 24033 | 04/22/22 11:18 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 24125 | 04/25/22 09:06 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 23941 | 04/21/22 13:45 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 24009 | 04/23/22 07:56 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 4.98 g | 50 mL | 23900 | 04/21/22 09:36 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 23991 | 04/21/22 19:15 | CH | XEN MID |

## Client Sample ID: SS02

**Lab Sample ID: 890-2209-2**

**Date Collected: 04/18/22 11:25**
**Matrix: Solid**
**Date Received: 04/19/22 16:26**

| 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 | 23940 | 04/21/22 11:35 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | | | 23883 | 04/22/22 03:05 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 24033 | 04/22/22 11:18 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 24125 | 04/25/22 09:06 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 23941 | 04/21/22 13:45 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 24009 | 04/23/22 07:34 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 4.96 g | 50 mL | 23900 | 04/21/22 09:36 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 23991 | 04/21/22 19:43 | CH | XEN MID |

## Client Sample ID: SS03

**Lab Sample ID: 890-2209-3**

**Date Collected: 04/18/22 11:40**
**Matrix: Solid**
**Date Received: 04/19/22 16:26**

| 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 | 23940 | 04/21/22 11:35 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | | | 23883 | 04/22/22 03:26 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 24033 | 04/22/22 11:18 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 24125 | 04/25/22 09:06 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 23941 | 04/21/22 13:45 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 5 | | | 24009 | 04/23/22 07:13 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 4.98 g | 50 mL | 23900 | 04/21/22 09:36 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 23991 | 04/21/22 20:10 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

## 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 | T104704400-21-22 | 06-30-22 |

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: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

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

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

# Sample Summary

Client: Ensolum
Project/Site: BEU 5E HON SOLO 114H

Job ID: 890-2209-1
SDG: 03E1558021

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2209-1 | SS01 | Solid | 04/18/22 11:20 | 04/19/22 16:26 | 0.5 |
| 890-2209-2 | SS02 | Solid | 04/18/22 11:25 | 04/19/22 16:26 | 0.5 |
| 890-2209-3 | SS03 | Solid | 04/18/22 11:40 | 04/19/22 16:26 | 0.5 |

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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: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | Ensolum LLC. | Company Name: | XTO Energy Inc |
| Address: | 705 W Wadley Ave Suite 210 | Address: | 3104 E. Green Street |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 817-683-2503 | 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: | BEU 5E Hon Sdo 114H | Turn Around | ☑ Routine ☐ Rush |
| Project Number: | 03E1558021 | Due Date: | |
| Project Location: | Eddy | TAT starts the day received by the lab, if received by 4:30pm | |
| Sampler's Name: | Alexis Castro | | |
| PO #: | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No | |
| Samples Received Intact: | (Yes) No | Thermometer ID: | IR-007 | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 3.8 | |
| Total Containers: | | Corrected Temperature: | 3.6 | |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | BTEX | TPH | Chlorides (Cl-) |
|---|---|---|---|---|---|---|---|---|---|---|
| SS01 | S | 04/18/22 | 1120 | 0.5' | | 1 | | X | X | X |
| SS02 | ↓ | ↓ | 1125 | ↓ | | ↓ | | ↓ | ↓ | ↓ |
| SS03 | ↓ | ↓ | 1140 | ↓ | | ↓ | | ↓ | ↓ | ↓ |

AC

890-2209 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**

INC: NAPP2209041753
CC: 1606761001

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 | | | 4-19-22 1626 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2209-1
SDG Number: 03E1558021

**Login Number: 2209**
**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. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2209-1
SDG Number: 03E1558021

**Login Number: 2209**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 04/21/22 11:26 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

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

Laboratory Job ID: 890-2363-1
Laboratory Sample Delivery Group: 03E1558021
Client Project/Site: BEU 5E Han Solo 114H

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*6/6/2022 11:53:26 AM*

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



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

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

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Laboratory Job ID: 890-2363-1
SDG: 03E1558021

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Qualifiers

### GC VOA

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

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| 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: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Job ID: 890-2363-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2363-1**

**Receipt**
The samples were received on 6/1/2022 9:07 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 2.4°C

**GC VOA**
Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-26732 and analytical batch 880-26723 recovered outside control limits for the following analytes: Benzene.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26732 and analytical batch 880-26723 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.

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-15387-A-1-C MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-26719 and analytical batch 880-26700 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

**HPLC/IC**
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26738 and analytical batch 880-26786 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: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Client Sample ID: PH01

**Date Collected: 05/31/22 12:30**
**Date Received: 06/01/22 09:07**
**Sample Depth: 1'**

**Lab Sample ID: 890-2363-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U *1 | 0.00201 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 07:56 | 1 |
| **Toluene** | **0.00272** | | 0.00201 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 07:56 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 07:56 | 1 |
| **m-Xylene & p-Xylene** | **0.0148** | | 0.00402 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 07:56 | 1 |
| **o-Xylene** | **0.00410** | | 0.00201 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 07:56 | 1 |
| **Xylenes, Total** | **0.0189** | | 0.00402 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 07:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *115* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 07:56* | *1* |
| *1,4-Difluorobenzene (Surr)* | *90* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 07:56* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.0216** | | 0.00402 | | mg/Kg | | | 06/03/22 14:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 06/02/22 17:28 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:54 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:54 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *76* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 14:54* | *1* |
| *o-Terphenyl* | *71* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 14:54* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **28.9** | | 5.00 | | mg/Kg | | | 06/04/22 17:35 | 1 |

## Client Sample ID: PH01

**Date Collected: 05/31/22 12:35**
**Date Received: 06/01/22 09:07**
**Sample Depth: 2'**

**Lab Sample ID: 890-2363-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U *1 | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:17 | 1 |
| Toluene | <0.00202 | U | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:17 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:17 | 1 |
| m-Xylene & p-Xylene | <0.00404 | U | 0.00404 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:17 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:17 | 1 |
| Xylenes, Total | <0.00404 | U | 0.00404 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 08:17* | *1* |

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# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Client Sample ID: PH01

**Lab Sample ID: 890-2363-2**
**Matrix: Solid**
**Date Collected: 05/31/22 12:35**
**Date Received: 06/01/22 09:07**
**Sample Depth: 2'**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *86* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 08:17* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00404 | U | 0.00404 | mg/Kg | | | 06/03/22 14:08 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | mg/Kg | | | 06/02/22 17:28 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 06/02/22 13:00 | 06/02/22 16:19 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 06/02/22 13:00 | 06/02/22 16:19 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 06/02/22 13:00 | 06/02/22 16:19 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *81* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 16:19* | *1* |
| *o-Terphenyl* | *80* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 16:19* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **46.6** | | 4.96 | mg/Kg | | | 06/04/22 17:44 | 1 |

## Client Sample ID: PH02

**Lab Sample ID: 890-2363-3**
**Matrix: Solid**
**Date Collected: 05/31/22 12:50**
**Date Received: 06/01/22 09:07**
**Sample Depth: 1'**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U *1 | 0.00200 | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:37 | 1 |
| Toluene | <0.00200 | U | 0.00200 | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:37 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:37 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:37 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:37 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:37 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 08:37* | *1* |
| *1,4-Difluorobenzene (Surr)* | *85* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 08:37* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | mg/Kg | | | 06/03/22 14:08 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | mg/Kg | | | 06/02/22 17:28 | 1 |

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# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Client Sample ID: PH02

**Lab Sample ID: 890-2363-3**
**Matrix: Solid**
**Date Collected: 05/31/22 12:50**
**Date Received: 06/01/22 09:07**
**Sample Depth: 1'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:32 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:32 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *83* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 14:32* | *1* |
| *o-Terphenyl* | *80* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 14:32* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **73.3** | | 5.01 | | mg/Kg | | | 06/04/22 17:53 | 1 |

## Client Sample ID: PH02

**Lab Sample ID: 890-2363-4**
**Matrix: Solid**
**Date Collected: 05/31/22 12:55**
**Date Received: 06/01/22 09:07**
**Sample Depth: 2'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U *1 | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:58 | 1 |
| Toluene | <0.00202 | U | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:58 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:58 | 1 |
| **m-Xylene & p-Xylene** | **0.00816** | | 0.00403 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:58 | 1 |
| **o-Xylene** | **0.00289** | | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:58 | 1 |
| **Xylenes, Total** | **0.0111** | | 0.00403 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 08:58 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *127* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 08:58* | *1* |
| *1,4-Difluorobenzene (Surr)* | *91* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 08:58* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.0111** | | 0.00403 | | mg/Kg | | | 06/03/22 14:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 06/02/22 17:28 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 15:36 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 15:36 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 15:36 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *80* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 15:36* | *1* |
| *o-Terphenyl* | *80* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 15:36* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Client Sample ID: PH02

**Lab Sample ID: 890-2363-4**
**Matrix: Solid**
**Date Collected: 05/31/22 12:55**
**Date Received: 06/01/22 09:07**
**Sample Depth: 2'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **513** | | 4.99 | | mg/Kg | | | 06/04/22 18:02 | 1 |

## Client Sample ID: PH03

**Lab Sample ID: 890-2363-5**
**Matrix: Solid**
**Date Collected: 05/31/22 13:35**
**Date Received: 06/01/22 09:07**
**Sample Depth: 1'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U *1 | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 09:19 | 1 |
| **Toluene** | **0.00383** | | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 09:19 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 09:19 | 1 |
| **m-Xylene & p-Xylene** | **0.00506** | | 0.00399 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 09:19 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 09:19 | 1 |
| **Xylenes, Total** | **0.00506** | | 0.00399 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 09:19 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *120* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 09:19* | *1* |
| *1,4-Difluorobenzene (Surr)* | *91* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 09:19* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.00889** | | 0.00399 | | mg/Kg | | | 06/03/22 14:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 06/02/22 17:28 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:11 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:11 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 14:11 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *93* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 14:11* | *1* |
| *o-Terphenyl* | *92* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 14:11* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **324** | **F1** | 4.95 | | mg/Kg | | | 06/04/22 18:11 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Client Sample ID: PH03

**Date Collected: 05/31/22 13:40**
**Date Received: 06/01/22 09:07**
**Sample Depth: 2'**

## Lab Sample ID: 890-2363-6

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:43 | 1 |
| **Toluene** | **0.00356** | | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:43 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:43 | 1 |
| **m-Xylene & p-Xylene** | **0.00623** | | 0.00400 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:43 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:43 | 1 |
| **Xylenes, Total** | **0.00623** | | 0.00400 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:43 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 09:43* | *1* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 09:43* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.00979** | | 0.00400 | | mg/Kg | | | 06/03/22 14:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 06/02/22 17:28 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 13:49 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 13:49 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 13:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *81* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 13:49* | *1* |
| *o-Terphenyl* | *78* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 13:49* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **173** | | 4.96 | | mg/Kg | | | 06/04/22 18:39 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## 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) |
| 880-15398-A-21-B MS | Matrix Spike | 96 | 101 |
| 880-15398-A-21-C MSD | Matrix Spike Duplicate | 97 | 102 |
| 890-2358-A-1-C MS | Matrix Spike | 126 | 85 |
| 890-2358-A-1-D MSD | Matrix Spike Duplicate | 125 | 87 |
| 890-2363-1 | PH01 | 115 | 90 |
| 890-2363-2 | PH01 | 102 | 86 |
| 890-2363-3 | PH02 | 114 | 85 |
| 890-2363-4 | PH02 | 127 | 91 |
| 890-2363-5 | PH03 | 120 | 91 |
| 890-2363-6 | PH03 | 100 | 94 |
| LCS 880-26723/3 | Lab Control Sample | 98 | 97 |
| LCS 880-26742/1-A | Lab Control Sample | 98 | 103 |
| LCSD 880-26723/4 | Lab Control Sample Dup | 114 | 94 |
| LCSD 880-26732/2-A | Lab Control Sample Dup | 109 | 96 |
| LCSD 880-26742/2-A | Lab Control Sample Dup | 97 | 102 |
| MB 880-26723/8 | Method Blank | 107 | 100 |
| MB 880-26732/5-A | Method Blank | 108 | 97 |
| MB 880-26742/5-A | Method Blank | 96 | 90 |
| MB 880-26827/5-A | Method Blank | 93 | 91 |

**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) |
| 880-15387-A-1-C MS | Matrix Spike | 77 | 69 S1- |
| 880-15387-A-1-D MSD | Matrix Spike Duplicate | 78 | 70 |
| 890-2363-1 | PH01 | 76 | 71 |
| 890-2363-2 | PH01 | 81 | 80 |
| 890-2363-3 | PH02 | 83 | 80 |
| 890-2363-4 | PH02 | 80 | 80 |
| 890-2363-5 | PH03 | 93 | 92 |
| 890-2363-6 | PH03 | 81 | 78 |
| LCS 880-26719/2-A | Lab Control Sample | 118 | 114 |
| LCSD 880-26719/3-A | Lab Control Sample Dup | 114 | 113 |
| MB 880-26719/1-A | Method Blank | 98 | 109 |

**Surrogate Legend**

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26723/8**
**Matrix: Solid**
**Analysis Batch: 26723**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | | 06/02/22 19:35 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | | *06/02/22 19:35* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | | *06/02/22 19:35* | *1* |

**Lab Sample ID: LCS 880-26723/3**
**Matrix: Solid**
**Analysis Batch: 26723**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09952 | | mg/Kg | | 100 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09677 | | mg/Kg | | 97 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1048 | | mg/Kg | | 105 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2023 | | mg/Kg | | 101 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09314 | | mg/Kg | | 93 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26723/4**
**Matrix: Solid**
**Analysis Batch: 26723**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1035 | | mg/Kg | | 103 | 70 - 130 | 4 | 35 |
| Toluene | | | 0.100 | 0.1107 | | mg/Kg | | 111 | 70 - 130 | 13 | 35 |
| Ethylbenzene | | | 0.100 | 0.1275 | | mg/Kg | | 127 | 70 - 130 | 20 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2600 | | mg/Kg | | 130 | 70 - 130 | 25 | 35 |
| o-Xylene | | | 0.100 | 0.1169 | | mg/Kg | | 117 | 70 - 130 | 23 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* |

**Lab Sample ID: MB 880-26732/5-A**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26732/5-A**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 06:12* | *1* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 06:12* | *1* |

**Lab Sample ID: LCSD 880-26732/2-A**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.07063 | *1 | mg/Kg | | 71 | 70 - 130 | 40 | 35 |
| Toluene | | | 0.100 | 0.07592 | | mg/Kg | | 76 | 70 - 130 | 25 | 35 |
| Ethylbenzene | | | 0.100 | 0.08356 | | mg/Kg | | 84 | 70 - 130 | 21 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1654 | | mg/Kg | | 83 | 70 - 130 | 20 | 35 |
| o-Xylene | | | 0.100 | 0.07869 | | mg/Kg | | 79 | 70 - 130 | 17 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* |

**Lab Sample ID: 890-2358-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U F1 *1 F2 | 0.101 | 0.02618 | F1 | mg/Kg | | 26 | 70 - 130 | | |
| Toluene | <0.00201 | U F1 F2 | 0.101 | 0.03647 | F1 | mg/Kg | | 36 | 70 - 130 | | |
| Ethylbenzene | <0.00201 | U F1 F2 | 0.101 | 0.04234 | F1 | mg/Kg | | 42 | 70 - 130 | | |
| m-Xylene & p-Xylene | <0.00402 | U F1 F2 | 0.202 | 0.08906 | F1 | mg/Kg | | 44 | 70 - 130 | | |
| o-Xylene | <0.00201 | U F1 F2 | 0.101 | 0.04507 | F1 | mg/Kg | | 44 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *126* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *85* | | *70 - 130* |

**Lab Sample ID: 890-2358-A-1-D MSD**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U F1 *1 F2 | 0.0998 | 0.05830 | F1 F2 | mg/Kg | | 58 | 70 - 130 | 76 | 35 |
| Toluene | <0.00201 | U F1 F2 | 0.0998 | 0.07534 | F2 | mg/Kg | | 75 | 70 - 130 | 70 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

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

**Lab Sample ID: 890-2358-A-1-D MSD**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00201 | U F1 F2 | 0.0998 | 0.09191 | F2 | mg/Kg | | 92 | 70 - 130 | 74 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U F1 F2 | 0.200 | 0.1906 | F2 | mg/Kg | | 95 | 70 - 130 | 73 | 35 |
| o-Xylene | <0.00201 | U F1 F2 | 0.0998 | 0.08909 | F2 | mg/Kg | | 88 | 70 - 130 | 66 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *125* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *87* | | *70 - 130* |

**Lab Sample ID: MB 880-26742/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 09:01* | *1* |
| *1,4-Difluorobenzene (Surr)* | *90* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 09:01* | *1* |

**Lab Sample ID: LCS 880-26742/1-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.08689 | | mg/Kg | | 87 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08352 | | mg/Kg | | 84 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08568 | | mg/Kg | | 86 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1693 | | mg/Kg | | 85 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09262 | | mg/Kg | | 93 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26742/2-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09661 | | mg/Kg | | 97 | 70 - 130 | 11 | 35 |
| Toluene | | | 0.100 | 0.09185 | | mg/Kg | | 92 | 70 - 130 | 10 | 35 |
| Ethylbenzene | | | 0.100 | 0.09186 | | mg/Kg | | 92 | 70 - 130 | 7 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1786 | | mg/Kg | | 89 | 70 - 130 | 5 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

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

**Lab Sample ID: LCSD 880-26742/2-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | | | 0.100 | 0.09290 | | mg/Kg | | 93 | 70 - 130 | 0 | 35 |

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

**Lab Sample ID: 880-15398-A-21-B MS**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.0996 | 0.08902 | | mg/Kg | | 89 | 70 - 130 |
| Toluene | <0.00199 | U | 0.0996 | 0.08192 | | mg/Kg | | 82 | 70 - 130 |
| Ethylbenzene | <0.00199 | U | 0.0996 | 0.07916 | | mg/Kg | | 79 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.199 | 0.1535 | | mg/Kg | | 77 | 70 - 130 |
| o-Xylene | <0.00199 | U | 0.0996 | 0.07784 | | mg/Kg | | 78 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* |

**Lab Sample ID: 880-15398-A-21-C MSD**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.101 | 0.1109 | | mg/Kg | | 110 | 70 - 130 | 22 | 35 |
| Toluene | <0.00199 | U | 0.101 | 0.1015 | | mg/Kg | | 100 | 70 - 130 | 21 | 35 |
| Ethylbenzene | <0.00199 | U | 0.101 | 0.09874 | | mg/Kg | | 98 | 70 - 130 | 22 | 35 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.202 | 0.1906 | | mg/Kg | | 94 | 70 - 130 | 22 | 35 |
| o-Xylene | <0.00199 | U | 0.101 | 0.09589 | | mg/Kg | | 95 | 70 - 130 | 21 | 35 |

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

**Lab Sample ID: MB 880-26827/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26827/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 93 | | 70 - 130 | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| 1,4-Difluorobenzene (Surr) | 91 | | 70 - 130 | 06/03/22 14:04 | 06/03/22 22:24 | 1 |

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

**Lab Sample ID: MB 880-26719/1-A**
**Matrix: Solid**
**Analysis Batch: 26700**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26719**

| 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 | | 06/02/22 10:21 | 06/02/22 10:38 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 10:21 | 06/02/22 10:38 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 10:21 | 06/02/22 10:38 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 98 | | 70 - 130 | 06/02/22 10:21 | 06/02/22 10:38 | 1 |
| o-Terphenyl | 109 | | 70 - 130 | 06/02/22 10:21 | 06/02/22 10:38 | 1 |

**Lab Sample ID: LCS 880-26719/2-A**
**Matrix: Solid**
**Analysis Batch: 26700**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 26719**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 959.3 | | mg/Kg | | 96 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 877.7 | | mg/Kg | | 88 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 118 | | 70 - 130 |
| o-Terphenyl | 114 | | 70 - 130 |

**Lab Sample ID: LCSD 880-26719/3-A**
**Matrix: Solid**
**Analysis Batch: 26700**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26719**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 932.6 | | mg/Kg | | 93 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 854.9 | | mg/Kg | | 85 | 70 - 130 | 3 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 114 | | 70 - 130 |
| o-Terphenyl | 113 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

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

**Lab Sample ID: 880-15387-A-1-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26700** — **Prep Batch: 26719**

| 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 | 997 | 813.3 | | mg/Kg | | 78 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 997 | 668.9 | F1 | mg/Kg | | 67 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *77* | | *70 - 130* |
| *o-Terphenyl* | *69* | *S1-* | *70 - 130* |

**Lab Sample ID: 880-15387-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26700** — **Prep Batch: 26719**

| 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 | 1000 | 805.1 | | mg/Kg | | 77 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 1000 | 686.7 | F1 | mg/Kg | | 69 | 70 - 130 | 3 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *78* | | *70 - 130* |
| *o-Terphenyl* | *70* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-26738/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 26786**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 06/04/22 14:50 | 1 |

**Lab Sample ID: LCS 880-26738/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 26786**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 225.5 | | mg/Kg | | 90 | 90 - 110 |

**Lab Sample ID: LCSD 880-26738/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 26786**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 228.2 | | mg/Kg | | 91 | 90 - 110 | 1 | 20 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 890-2363-5 MS**
**Matrix: Solid**
**Analysis Batch: 26786**

**Client Sample ID: PH03**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 324 | F1 | 248 | 522.4 | F1 | mg/Kg | | 80 | 90 - 110 | | |

**Lab Sample ID: 890-2363-5 MSD**
**Matrix: Solid**
**Analysis Batch: 26786**

**Client Sample ID: PH03**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 324 | F1 | 248 | 541.4 | F1 | mg/Kg | | 88 | 90 - 110 | 4 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## GC VOA

### Analysis Batch: 26723

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Total/NA | Solid | 8021B | 26732 |
| 890-2363-2 | PH01 | Total/NA | Solid | 8021B | 26732 |
| 890-2363-3 | PH02 | Total/NA | Solid | 8021B | 26732 |
| 890-2363-4 | PH02 | Total/NA | Solid | 8021B | 26732 |
| 890-2363-5 | PH03 | Total/NA | Solid | 8021B | 26732 |
| MB 880-26723/8 | Method Blank | Total/NA | Solid | 8021B | |
| MB 880-26732/5-A | Method Blank | Total/NA | Solid | 8021B | 26732 |
| LCS 880-26723/3 | Lab Control Sample | Total/NA | Solid | 8021B | |
| LCSD 880-26723/4 | Lab Control Sample Dup | Total/NA | Solid | 8021B | |
| LCSD 880-26732/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 26732 |
| 890-2358-A-1-C MS | Matrix Spike | Total/NA | Solid | 8021B | 26732 |
| 890-2358-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 26732 |

### Prep Batch: 26732

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Total/NA | Solid | 5035 | |
| 890-2363-2 | PH01 | Total/NA | Solid | 5035 | |
| 890-2363-3 | PH02 | Total/NA | Solid | 5035 | |
| 890-2363-4 | PH02 | Total/NA | Solid | 5035 | |
| 890-2363-5 | PH03 | Total/NA | Solid | 5035 | |
| MB 880-26732/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCSD 880-26732/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2358-A-1-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-2358-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Prep Batch: 26742

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-6 | PH03 | Total/NA | Solid | 5035 | |
| MB 880-26742/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-26742/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-26742/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-15398-A-21-B MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-15398-A-21-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 26785

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-6 | PH03 | Total/NA | Solid | 8021B | 26742 |
| MB 880-26742/5-A | Method Blank | Total/NA | Solid | 8021B | 26742 |
| MB 880-26827/5-A | Method Blank | Total/NA | Solid | 8021B | 26827 |
| LCS 880-26742/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 26742 |
| LCSD 880-26742/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 26742 |
| 880-15398-A-21-B MS | Matrix Spike | Total/NA | Solid | 8021B | 26742 |
| 880-15398-A-21-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 26742 |

### Prep Batch: 26827

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-26827/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Analysis Batch: 26832

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Total/NA | Solid | Total BTEX | |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## GC VOA (Continued)

### Analysis Batch: 26832 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-2 | PH01 | Total/NA | Solid | Total BTEX | |
| 890-2363-3 | PH02 | Total/NA | Solid | Total BTEX | |
| 890-2363-4 | PH02 | Total/NA | Solid | Total BTEX | |
| 890-2363-5 | PH03 | Total/NA | Solid | Total BTEX | |
| 890-2363-6 | PH03 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 26700

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Total/NA | Solid | 8015B NM | 26719 |
| 890-2363-2 | PH01 | Total/NA | Solid | 8015B NM | 26719 |
| 890-2363-3 | PH02 | Total/NA | Solid | 8015B NM | 26719 |
| 890-2363-4 | PH02 | Total/NA | Solid | 8015B NM | 26719 |
| 890-2363-5 | PH03 | Total/NA | Solid | 8015B NM | 26719 |
| 890-2363-6 | PH03 | Total/NA | Solid | 8015B NM | 26719 |
| MB 880-26719/1-A | Method Blank | Total/NA | Solid | 8015B NM | 26719 |
| LCS 880-26719/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 26719 |
| LCSD 880-26719/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 26719 |
| 880-15387-A-1-C MS | Matrix Spike | Total/NA | Solid | 8015B NM | 26719 |
| 880-15387-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 26719 |

### Prep Batch: 26719

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Total/NA | Solid | 8015NM Prep | |
| 890-2363-2 | PH01 | Total/NA | Solid | 8015NM Prep | |
| 890-2363-3 | PH02 | Total/NA | Solid | 8015NM Prep | |
| 890-2363-4 | PH02 | Total/NA | Solid | 8015NM Prep | |
| 890-2363-5 | PH03 | Total/NA | Solid | 8015NM Prep | |
| 890-2363-6 | PH03 | Total/NA | Solid | 8015NM Prep | |
| MB 880-26719/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-26719/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-26719/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-15387-A-1-C MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-15387-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 26769

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Total/NA | Solid | 8015 NM | |
| 890-2363-2 | PH01 | Total/NA | Solid | 8015 NM | |
| 890-2363-3 | PH02 | Total/NA | Solid | 8015 NM | |
| 890-2363-4 | PH02 | Total/NA | Solid | 8015 NM | |
| 890-2363-5 | PH03 | Total/NA | Solid | 8015 NM | |
| 890-2363-6 | PH03 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 26738

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Soluble | Solid | DI Leach | |
| 890-2363-2 | PH01 | Soluble | Solid | DI Leach | |
| 890-2363-3 | PH02 | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## HPLC/IC (Continued)

### Leach Batch: 26738 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-4 | PH02 | Soluble | Solid | DI Leach | |
| 890-2363-5 | PH03 | Soluble | Solid | DI Leach | |
| 890-2363-6 | PH03 | Soluble | Solid | DI Leach | |
| MB 880-26738/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-26738/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-26738/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-2363-5 MS | PH03 | Soluble | Solid | DI Leach | |
| 890-2363-5 MSD | PH03 | Soluble | Solid | DI Leach | |

### Analysis Batch: 26786

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Soluble | Solid | 300.0 | 26738 |
| 890-2363-2 | PH01 | Soluble | Solid | 300.0 | 26738 |
| 890-2363-3 | PH02 | Soluble | Solid | 300.0 | 26738 |
| 890-2363-4 | PH02 | Soluble | Solid | 300.0 | 26738 |
| 890-2363-5 | PH03 | Soluble | Solid | 300.0 | 26738 |
| 890-2363-6 | PH03 | Soluble | Solid | 300.0 | 26738 |
| MB 880-26738/1-A | Method Blank | Soluble | Solid | 300.0 | 26738 |
| LCS 880-26738/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 26738 |
| LCSD 880-26738/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 26738 |
| 890-2363-5 MS | PH03 | Soluble | Solid | 300.0 | 26738 |
| 890-2363-5 MSD | PH03 | Soluble | Solid | 300.0 | 26738 |

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Client Sample ID: PH01
**Date Collected: 05/31/22 12:30**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2363-1
**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 | 26732 | 06/02/22 11:29 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 26723 | 06/03/22 07:56 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26832 | 06/03/22 14:08 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26769 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 14:54 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 17:35 | CH | XEN MID |

## Client Sample ID: PH01
**Date Collected: 05/31/22 12:35**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2363-2
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.95 g | 5 mL | 26732 | 06/02/22 11:29 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 26723 | 06/03/22 08:17 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26832 | 06/03/22 14:08 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26769 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 16:19 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.04 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 17:44 | CH | XEN MID |

## Client Sample ID: PH02
**Date Collected: 05/31/22 12:50**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2363-3
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.99 g | 5 mL | 26732 | 06/02/22 11:29 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 26723 | 06/03/22 08:37 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26832 | 06/03/22 14:08 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26769 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 14:32 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 4.99 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 17:53 | CH | XEN MID |

## Client Sample ID: PH02
**Date Collected: 05/31/22 12:55**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2363-4
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.96 g | 5 mL | 26732 | 06/02/22 11:29 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 26723 | 06/03/22 08:58 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26832 | 06/03/22 14:08 | SM | XEN MID |

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## Client Sample ID: PH02

**Date Collected: 05/31/22 12:55**
**Date Received: 06/01/22 09:07**

**Lab Sample ID: 890-2363-4**
**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 | | | 26769 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 15:36 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 18:02 | CH | XEN MID |

## Client Sample ID: PH03

**Date Collected: 05/31/22 13:35**
**Date Received: 06/01/22 09:07**

**Lab Sample ID: 890-2363-5**
**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 | | | 5.01 g | 5 mL | 26732 | 06/02/22 11:29 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 26723 | 06/03/22 09:19 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26832 | 06/03/22 14:08 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26769 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 14:11 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.05 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 18:11 | CH | XEN MID |

## Client Sample ID: PH03

**Date Collected: 05/31/22 13:40**
**Date Received: 06/01/22 09:07**

**Lab Sample ID: 890-2363-6**
**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 | | | 5.00 g | 5 mL | 26742 | 06/02/22 13:19 | EL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/04/22 09:43 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26832 | 06/03/22 14:08 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26769 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 13:49 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.04 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 18:39 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

## 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 | T104704400-21-22 | 06-30-22 |

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: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

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

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

# Sample Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2363-1
SDG: 03E1558021

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2363-1 | PH01 | Solid | 05/31/22 12:30 | 06/01/22 09:07 | 1' |
| 890-2363-2 | PH01 | Solid | 05/31/22 12:35 | 06/01/22 09:07 | 2' |
| 890-2363-3 | PH02 | Solid | 05/31/22 12:50 | 06/01/22 09:07 | 1' |
| 890-2363-4 | PH02 | Solid | 05/31/22 12:55 | 06/01/22 09:07 | 2' |
| 890-2363-5 | PH03 | Solid | 05/31/22 13:35 | 06/01/22 09:07 | 1' |
| 890-2363-6 | PH03 | Solid | 05/31/22 13:40 | 06/01/22 09:07 | 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: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | Ensolum LLC. | Company Name: | XTO Energy, Inc. |
| Address: | | Address: | 3104 E. Green Street |
| City, State ZIP: | | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 817.683.2503 | Email: | |

**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: | BEU 5E Han Solo 114H | Turn Around | |
| Project Number: | 03E1558021 | ☑ Routine ☒ Rush | |
| Project Location: | | Due Date: | 3DAY TAT |
| 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: | T.M-007 | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 2.6 | |
| Total Containers: | | Corrected Temperature: | 2.4 | |

**ANALYSIS REQUEST**

**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 | CHLORIDES (EPA: 300.0) | TPH (8015) | BTEX (8021) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| PH01 | s | 05.31.22 | 1230 | 1' | G | 1 | x | x | x | Incident ID:NAPP2209041753 |
| PH01 | s | 05.31.22 | 1235 | 2' | G | 1 | x | x | x | |
| PH02 | s | 05.31.22 | 1250 | 1' | G | 1 | x | x | x | Cost Center:1606761001 |
| PH02 | s | 05.31.22 | 1255 | 2' | G | 1 | x | x | x | |
| PH03 | s | 05.31.22 | 1335 | 1' | G | 1 | x | x | x | AFE: |
| PH03 | s | 05.31.22 | 1340 | 2' | G | 1 | x | x | x | |

890-2363 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 | Amanda Sutton | 10-1-22 9:00 | | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2363-1
SDG Number: 03E1558021

**Login Number: 2363**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2363-1
SDG Number: 03E1558021

**Login Number: 2363**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 06/02/22 11:42 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

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

Laboratory Job ID: 890-2364-1
Laboratory Sample Delivery Group: 03E1558021
Client Project/Site: BEU 5E Han Solo 114H

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*6/3/2022 3:07:54 PM*

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



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

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

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Laboratory Job ID: 890-2364-1
SDG: 03E1558021

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## Qualifiers

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| *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 |
|---|---|
| F1 | MS and/or MSD recovery exceeds control limits. |
| 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: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## Job ID: 890-2364-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2364-1**

**Receipt**
The samples were received on 6/1/2022 9:07 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 2.4°C

**GC VOA**
Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-26732 and analytical batch 880-26723 recovered outside control limits for the following analytes: Benzene.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26732 and analytical batch 880-26723 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.

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-2361-A-27-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The method blank for preparation batch 880-26686 and analytical batch 880-26698 contained Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-26686 and analytical batch 880-26698 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## Client Sample ID: PH04

**Date Collected: 05/31/22 15:10**
**Date Received: 06/01/22 09:07**
**Sample Depth: 1'**

**Lab Sample ID: 890-2364-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U *1 | 0.00201 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:24 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:24 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:24 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:24 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:24 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:24 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 11:24* | *1* |
| *1,4-Difluorobenzene (Surr)* | *90* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 11:24* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 06/03/22 14:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.8 | U | 49.8 | | mg/Kg | | | 06/02/22 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.8 | U | 49.8 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 15:36 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.8 | U | 49.8 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 15:36 | 1 |
| Oil Range Organics (Over C28-C36) | <49.8 | U | 49.8 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 15:36 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *103* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 15:36* | *1* |
| *o-Terphenyl* | *99* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 15:36* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **16.8** | | 4.95 | | mg/Kg | | | 06/02/22 21:04 | 1 |

## Client Sample ID: PH04

**Date Collected: 05/31/22 15:20**
**Date Received: 06/01/22 09:07**
**Sample Depth: 2'**

**Lab Sample ID: 890-2364-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U *1 | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:45 | 1 |
| **Toluene** | **0.00377** | | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:45 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:45 | 1 |
| **m-Xylene & p-Xylene** | **0.00406** | | 0.00404 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:45 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:45 | 1 |
| **Xylenes, Total** | **0.00406** | | 0.00404 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 11:45 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 11:45* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## Client Sample ID: PH04

**Date Collected: 05/31/22 15:20**
**Date Received: 06/01/22 09:07**
**Sample Depth: 2'**

## Lab Sample ID: 890-2364-2

**Matrix: Solid**

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

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *85* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 11:45* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.00783** | | 0.00404 | | mg/Kg | | | 06/03/22 14:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **81.4** | | 49.9 | | mg/Kg | | | 06/02/22 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 15:15 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **81.4** | | 49.9 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 15:15 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 15:15 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *124* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 15:15* | *1* |
| *o-Terphenyl* | *121* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 15:15* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **70.0** | | 5.05 | | mg/Kg | | | 06/02/22 21:12 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## 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) | | | | | | | | | | |
| 890-2358-A-1-C MS | Matrix Spike | 126 | 85 | | | | | | | | | | |
| 890-2358-A-1-D MSD | Matrix Spike Duplicate | 125 | 87 | | | | | | | | | | |
| 890-2364-1 | PH04 | 105 | 90 | | | | | | | | | | |
| 890-2364-2 | PH04 | 99 | 85 | | | | | | | | | | |
| LCS 880-26723/3 | Lab Control Sample | 98 | 97 | | | | | | | | | | |
| LCS 880-26732/1-A | Lab Control Sample | 101 | 103 | | | | | | | | | | |
| LCSD 880-26723/4 | Lab Control Sample Dup | 114 | 94 | | | | | | | | | | |
| LCSD 880-26732/2-A | Lab Control Sample Dup | 109 | 96 | | | | | | | | | | |
| MB 880-26723/8 | Method Blank | 107 | 100 | | | | | | | | | | |
| MB 880-26732/5-A | Method Blank | 108 | 97 | | | | | | | | | | |

**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) | | | | | | | | | | |
| 890-2361-A-27-B MS | Matrix Spike | 118 | 122 | | | | | | | | | | |
| 890-2361-A-27-C MSD | Matrix Spike Duplicate | 114 | 119 | | | | | | | | | | |
| 890-2364-1 | PH04 | 103 | 99 | | | | | | | | | | |
| 890-2364-2 | PH04 | 124 | 121 | | | | | | | | | | |
| LCS 880-26686/2-A | Lab Control Sample | 114 | 116 | | | | | | | | | | |
| LCSD 880-26686/3-A | Lab Control Sample Dup | 114 | 116 | | | | | | | | | | |
| MB 880-26686/1-A | Method Blank | 100 | 108 | | | | | | | | | | |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26723/8**
**Matrix: Solid**
**Analysis Batch: 26723**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | | 06/02/22 19:35 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | | 06/02/22 19:35 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | | *06/02/22 19:35* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | | *06/02/22 19:35* | *1* |

**Lab Sample ID: LCS 880-26723/3**
**Matrix: Solid**
**Analysis Batch: 26723**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09952 | | mg/Kg | | 100 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09677 | | mg/Kg | | 97 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1048 | | mg/Kg | | 105 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2023 | | mg/Kg | | 101 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09314 | | mg/Kg | | 93 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26723/4**
**Matrix: Solid**
**Analysis Batch: 26723**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1035 | | mg/Kg | | 103 | 70 - 130 | 4 | 35 |
| Toluene | | | 0.100 | 0.1107 | | mg/Kg | | 111 | 70 - 130 | 13 | 35 |
| Ethylbenzene | | | 0.100 | 0.1275 | | mg/Kg | | 127 | 70 - 130 | 20 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2600 | | mg/Kg | | 130 | 70 - 130 | 25 | 35 |
| o-Xylene | | | 0.100 | 0.1169 | | mg/Kg | | 117 | 70 - 130 | 23 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* |

**Lab Sample ID: MB 880-26732/5-A**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26732/5-A**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/02/22 11:29 | 06/03/22 06:12 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 06:12* | *1* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* | *06/02/22 11:29* | *06/03/22 06:12* | *1* |

**Lab Sample ID: LCS 880-26732/1-A**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1064 | | mg/Kg | | 106 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09779 | | mg/Kg | | 98 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1036 | | mg/Kg | | 104 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2030 | | mg/Kg | | 102 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09296 | | mg/Kg | | 93 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26732/2-A**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.07063 | *1 | mg/Kg | | 71 | 70 - 130 | 40 | 35 |
| Toluene | | | 0.100 | 0.07592 | | mg/Kg | | 76 | 70 - 130 | 25 | 35 |
| Ethylbenzene | | | 0.100 | 0.08356 | | mg/Kg | | 84 | 70 - 130 | 21 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1654 | | mg/Kg | | 83 | 70 - 130 | 20 | 35 |
| o-Xylene | | | 0.100 | 0.07869 | | mg/Kg | | 79 | 70 - 130 | 17 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* |

**Lab Sample ID: 890-2358-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U F1 *1 F2 | 0.101 | 0.02618 | F1 | mg/Kg | | 26 | 70 - 130 | | |
| Toluene | <0.00201 | U F1 F2 | 0.101 | 0.03647 | F1 | mg/Kg | | 36 | 70 - 130 | | |
| Ethylbenzene | <0.00201 | U F1 F2 | 0.101 | 0.04234 | F1 | mg/Kg | | 42 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

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

**Lab Sample ID: 890-2358-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| m-Xylene & p-Xylene | <0.00402 | U F1 F2 | 0.202 | 0.08906 | F1 | mg/Kg | | 44 | 70 - 130 |
| o-Xylene | <0.00201 | U F1 F2 | 0.101 | 0.04507 | F1 | mg/Kg | | 44 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *126* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *85* | | *70 - 130* |

**Lab Sample ID: 890-2358-A-1-D MSD**
**Matrix: Solid**
**Analysis Batch: 26723**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 26732**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U F1 *1 F2 | 0.0998 | 0.05830 | F1 F2 | mg/Kg | | 58 | 70 - 130 | 76 | 35 |
| Toluene | <0.00201 | U F1 F2 | 0.0998 | 0.07534 | F2 | mg/Kg | | 75 | 70 - 130 | 70 | 35 |
| Ethylbenzene | <0.00201 | U F1 F2 | 0.0998 | 0.09191 | F2 | mg/Kg | | 92 | 70 - 130 | 74 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U F1 F2 | 0.200 | 0.1906 | F2 | mg/Kg | | 95 | 70 - 130 | 73 | 35 |
| o-Xylene | <0.00201 | U F1 F2 | 0.0998 | 0.08909 | F2 | mg/Kg | | 88 | 70 - 130 | 66 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *125* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *87* | | *70 - 130* |

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

**Lab Sample ID: MB 880-26686/1-A**
**Matrix: Solid**
**Analysis Batch: 26698**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26686**

| 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 | | 06/01/22 16:47 | 06/02/22 10:38 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 06/01/22 16:47 | 06/02/22 10:38 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 06/01/22 16:47 | 06/02/22 10:38 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *100* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 10:38* | *1* |
| *o-Terphenyl* | *108* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 10:38* | *1* |

**Lab Sample ID: LCS 880-26686/2-A**
**Matrix: Solid**
**Analysis Batch: 26698**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 26686**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 1000 | 912.2 | | mg/Kg | | 91 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 1000 | 981.2 | | mg/Kg | | 98 | 70 - 130 |

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# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

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

**Lab Sample ID: LCS 880-26686/2-A**
**Matrix: Solid**
**Analysis Batch: 26698**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 26686**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 114 | | 70 - 130 |
| o-Terphenyl | 116 | | 70 - 130 |

**Lab Sample ID: LCSD 880-26686/3-A**
**Matrix: Solid**
**Analysis Batch: 26698**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26686**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 920.1 | | mg/Kg | | 92 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 999.8 | | mg/Kg | | 100 | 70 - 130 | 2 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 114 | | 70 - 130 |
| o-Terphenyl | 116 | | 70 - 130 |

**Lab Sample ID: 890-2361-A-27-B MS**
**Matrix: Solid**
**Analysis Batch: 26698**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 26686**

| 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 F1 | 997 | 1303 | | mg/Kg | | 127 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 997 | 1216 | | mg/Kg | | 122 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 118 | | 70 - 130 |
| o-Terphenyl | 122 | | 70 - 130 |

**Lab Sample ID: 890-2361-A-27-C MSD**
**Matrix: Solid**
**Analysis Batch: 26698**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 26686**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U F1 | 1000 | 1390 | F1 | mg/Kg | | 135 | 70 - 130 | 6 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 1000 | 1190 | | mg/Kg | | 119 | 70 - 130 | 2 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 114 | | 70 - 130 |
| o-Terphenyl | 119 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-26644/1-A**
**Matrix: Solid**
**Analysis Batch: 26760**

**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 | | | 06/02/22 20:16 | 1 |

**Lab Sample ID: LCS 880-26644/2-A**
**Matrix: Solid**
**Analysis Batch: 26760**

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

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

**Lab Sample ID: LCSD 880-26644/3-A**
**Matrix: Solid**
**Analysis Batch: 26760**

**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 | 243.4 | | mg/Kg | | 97 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 880-15356-A-21-F MS**
**Matrix: Solid**
**Analysis Batch: 26760**

**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 | 13.6 | | 248 | 251.4 | | mg/Kg | | 96 | 90 - 110 | | |

**Lab Sample ID: 880-15356-A-21-G MSD**
**Matrix: Solid**
**Analysis Batch: 26760**

**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 | 13.6 | | 248 | 252.2 | | mg/Kg | | 96 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## GC VOA

### Analysis Batch: 26723

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Total/NA | Solid | 8021B | 26732 |
| 890-2364-2 | PH04 | Total/NA | Solid | 8021B | 26732 |
| MB 880-26723/8 | Method Blank | Total/NA | Solid | 8021B | |
| MB 880-26732/5-A | Method Blank | Total/NA | Solid | 8021B | 26732 |
| LCS 880-26723/3 | Lab Control Sample | Total/NA | Solid | 8021B | |
| LCS 880-26732/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 26732 |
| LCSD 880-26723/4 | Lab Control Sample Dup | Total/NA | Solid | 8021B | |
| LCSD 880-26732/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 26732 |
| 890-2358-A-1-C MS | Matrix Spike | Total/NA | Solid | 8021B | 26732 |
| 890-2358-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 26732 |

### Prep Batch: 26732

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Total/NA | Solid | 5035 | |
| 890-2364-2 | PH04 | Total/NA | Solid | 5035 | |
| MB 880-26732/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-26732/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-26732/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2358-A-1-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-2358-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 26833

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Total/NA | Solid | Total BTEX | |
| 890-2364-2 | PH04 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 26686

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Total/NA | Solid | 8015NM Prep | |
| 890-2364-2 | PH04 | Total/NA | Solid | 8015NM Prep | |
| MB 880-26686/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-26686/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-26686/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2361-A-27-B MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2361-A-27-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 26698

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Total/NA | Solid | 8015B NM | 26686 |
| 890-2364-2 | PH04 | Total/NA | Solid | 8015B NM | 26686 |
| MB 880-26686/1-A | Method Blank | Total/NA | Solid | 8015B NM | 26686 |
| LCS 880-26686/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 26686 |
| LCSD 880-26686/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 26686 |
| 890-2361-A-27-B MS | Matrix Spike | Total/NA | Solid | 8015B NM | 26686 |
| 890-2361-A-27-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 26686 |

### Analysis Batch: 26764

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Total/NA | Solid | 8015 NM | |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## GC Semi VOA (Continued)

### Analysis Batch: 26764 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-2 | PH04 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 26644

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Soluble | Solid | DI Leach | |
| 890-2364-2 | PH04 | Soluble | Solid | DI Leach | |
| MB 880-26644/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-26644/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-26644/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-15356-A-21-F MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-15356-A-21-G MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 26760

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Soluble | Solid | 300.0 | 26644 |
| 890-2364-2 | PH04 | Soluble | Solid | 300.0 | 26644 |
| MB 880-26644/1-A | Method Blank | Soluble | Solid | 300.0 | 26644 |
| LCS 880-26644/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 26644 |
| LCSD 880-26644/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 26644 |
| 880-15356-A-21-F MS | Matrix Spike | Soluble | Solid | 300.0 | 26644 |
| 880-15356-A-21-G MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 26644 |

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## Client Sample ID: PH04

**Date Collected: 05/31/22 15:10**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2364-1

**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 | 26732 | 06/02/22 11:29 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 26723 | 06/03/22 11:24 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26833 | 06/03/22 14:08 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26764 | 06/02/22 17:22 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.04 g | 10 mL | 26686 | 06/01/22 16:47 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26698 | 06/02/22 15:36 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.05 g | 50 mL | 26644 | 06/01/22 10:56 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26760 | 06/02/22 21:04 | CH | XEN MID |

## Client Sample ID: PH04

**Date Collected: 05/31/22 15:20**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2364-2

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.95 g | 5 mL | 26732 | 06/02/22 11:29 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 26723 | 06/03/22 11:45 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26833 | 06/03/22 14:08 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26764 | 06/02/22 17:22 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 26686 | 06/01/22 16:47 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26698 | 06/02/22 15:15 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 4.95 g | 50 mL | 26644 | 06/01/22 10:56 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26760 | 06/02/22 21:12 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

## 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 | T104704400-21-22 | 06-30-22 |

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: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

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

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

# Sample Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2364-1
SDG: 03E1558021

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2364-1 | PH04 | Solid | 05/31/22 15:10 | 06/01/22 09:07 | 1' |
| 890-2364-2 | PH04 | Solid | 05/31/22 15:20 | 06/01/22 09:07 | 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: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | Ensolum LLC. | Company Name: | XTO Energy, Inc. |
| Address: | | Address: | 3104 E. Green Street |
| City, State ZIP: | | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 817.683.2503 | Email: | |

**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: | BEU 5E Han Solo 114H | **Turn Around** | |
| Project Number: | 03E1558021 | ☐ Routine ☒ Rush | |
| Project Location: | | Due Date: 3DAY TAT | |
| 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: | T-NM-007 | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 2.6 | |
| Total Containers: | | Corrected Temperature: | 2.4 | |

**ANALYSIS REQUEST**

**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 | Pres. Code | CHLORIDES (EPA: 300.0) | TPH (8015) | BTEX (8021) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PH04 | s | 05.31.22 | 1510 | 1' | G | 1 | | x | x | x | Incident ID:NAPP2209041753 |
| PH04 | s | 05.31.22 | 1520 | 2' | G | 1 | | x | x | x | |
| | | | | | | | | | | | Cost Center:1606761001 |
| | | | | | | | | | | | |
| | | | | | | | | | | | AFE: |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

890-2364 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 | Amanda Stuff | 6-1-22 9:07 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2364-1
SDG Number: 03E1558021

**Login Number: 2364**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2364-1
SDG Number: 03E1558021

**Login Number: 2364**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 06/02/22 11:42 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

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

Laboratory Job ID: 890-2365-1
Laboratory Sample Delivery Group: 03E1558021
Client Project/Site: BEU 5E Han Solo 114H
Revision: 1

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Kalei Jennings

Jkramer

*Authorized for release by:*
*6/14/2022 9:33:55 AM*

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



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

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

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Laboratory Job ID: 890-2365-1
SDG: 03E1558021

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| 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: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Job ID: 890-2365-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-2365-1**

REVISION

The report being provided is a revision of the original report sent on 6/6/2022. The report (revision 1) is being revised due to Per client email, requesting TPH re run on sample FS04.

Report revision history

**Receipt**
The samples were received on 6/1/2022 9:07 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 2.4°C

**GC VOA**
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26827 and analytical batch 880-26785 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.

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-2361-A-27-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The method blank for preparation batch 880-26686 and analytical batch 880-26698 contained Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-26686 and analytical batch 880-26698 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-15469-A-1-B MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-27167 and analytical batch 880-27244 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-27167/2-A), (880-15629-A-21-C MS) and (880-15629-A-21-D MSD). Evidence of matrix interferences is not obvious.

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

**HPLC/IC**
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26738 and analytical batch 880-26786 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.

# Case Narrative

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Job ID: 890-2365-1 (Continued)

**Laboratory: Eurofins Carlsbad (Continued)**

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Client Sample ID: FS01
**Date Collected: 05/31/22 14:25**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.75'**

## Lab Sample ID: 890-2365-1
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:03 | 1 |
| **Toluene** | **0.00781** | | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:03 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:03 | 1 |
| **m-Xylene & p-Xylene** | **0.00644** | | 0.00399 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:03 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:03 | 1 |
| **Xylenes, Total** | **0.00644** | | 0.00399 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 10:03* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 10:03* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.0143** | | 0.00399 | | mg/Kg | | | 06/06/22 12:13 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **57.3** | | 50.0 | | mg/Kg | | | 06/02/22 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 17:02 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **57.3** | | 50.0 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 17:02 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 17:02 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *99* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 17:02* | *1* |
| *o-Terphenyl* | *96* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 17:02* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **443** | | 4.99 | | mg/Kg | | | 06/04/22 18:48 | 1 |

## Client Sample ID: FS02
**Date Collected: 05/31/22 15:10**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.75'**

## Lab Sample ID: 890-2365-2
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:24 | 1 |
| **Toluene** | **0.00694** | | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:24 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:24 | 1 |
| **m-Xylene & p-Xylene** | **0.00819** | | 0.00401 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:24 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:24 | 1 |
| **Xylenes, Total** | **0.00819** | | 0.00401 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 10:24 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 10:24* | *1* |

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Client Sample ID: FS02

**Date Collected: 05/31/22 15:10**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.75'**

**Lab Sample ID: 890-2365-2**
**Matrix: Solid**

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

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *92* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 10:24* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.0151** | | 0.00401 | | mg/Kg | | | 06/06/22 12:13 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 06/02/22 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 17:23 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 17:23 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 17:23 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *97* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 17:23* | *1* |
| *o-Terphenyl* | *96* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 17:23* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **500** | | 5.04 | | mg/Kg | | | 06/04/22 19:16 | 1 |

## Client Sample ID: FS03

**Date Collected: 05/31/22 15:15**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.75'**

**Lab Sample ID: 890-2365-3**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U F1 F2 | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:46 | 1 |
| **Toluene** | **0.0122** | **F1 F2** | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:46 | 1 |
| Ethylbenzene | <0.00200 | U F1 F2 | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:46 | 1 |
| **m-Xylene & p-Xylene** | **0.0111** | **F1** | 0.00401 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:46 | 1 |
| o-Xylene | <0.00200 | U F1 | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:46 | 1 |
| **Xylenes, Total** | **0.0111** | **F1** | 0.00401 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:46 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 22:46* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 22:46* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.0233** | | 0.00401 | | mg/Kg | | | 06/06/22 12:13 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **67.0** | | 49.8 | | mg/Kg | | | 06/02/22 17:22 | 1 |

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# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Client Sample ID: FS03
**Date Collected: 05/31/22 15:15**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.75'**

## Lab Sample ID: 890-2365-3
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.8 | U | 49.8 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 16:19 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **67.0** | | 49.8 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 16:19 | 1 |
| Oil Range Organics (Over C28-C36) | <49.8 | U | 49.8 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 16:19 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *101* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 16:19* | *1* |
| *o-Terphenyl* | *97* | | *70 - 130* | *06/01/22 16:47* | *06/02/22 16:19* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **231** | | 5.03 | | mg/Kg | | | 06/04/22 19:25 | 1 |

## Client Sample ID: FS04
**Date Collected: 05/31/22 15:20**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.75'**

## Lab Sample ID: 890-2365-4
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:07 | 1 |
| **Toluene** | **0.00580** | | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:07 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:07 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:07 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:07 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:07 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 23:07* | *1* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 23:07* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.00580** | | 0.00399 | | mg/Kg | | | 06/06/22 12:13 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **108** | | 49.9 | | mg/Kg | | | 06/02/22 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 06/09/22 10:13 | 06/10/22 19:51 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **108** | | 49.9 | | mg/Kg | | 06/09/22 10:13 | 06/10/22 19:51 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 06/09/22 10:13 | 06/10/22 19:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *72* | | *70 - 130* | *06/09/22 10:13* | *06/10/22 19:51* | *1* |
| *o-Terphenyl* | *75* | | *70 - 130* | *06/09/22 10:13* | *06/10/22 19:51* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Client Sample ID: FS04

**Date Collected: 05/31/22 15:20**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.75'**

## Lab Sample ID: 890-2365-4

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 490 | | 5.00 | | mg/Kg | | | 06/04/22 19:34 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## 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) |
| 890-2365-1 | FS01 | 99 | 100 |
| 890-2365-2 | FS02 | 107 | 92 |
| 890-2365-3 | FS03 | 99 | 100 |
| 890-2365-3 MS | FS03 | 104 | 100 |
| 890-2365-3 MSD | FS03 | 102 | 101 |
| 890-2365-4 | FS04 | 100 | 98 |
| LCS 880-26742/1-A | Lab Control Sample | 98 | 103 |
| LCS 880-26827/1-A | Lab Control Sample | 101 | 102 |
| LCSD 880-26742/2-A | Lab Control Sample Dup | 97 | 102 |
| LCSD 880-26827/2-A | Lab Control Sample Dup | 102 | 104 |
| MB 880-26742/5-A | Method Blank | 96 | 90 |
| MB 880-26788/5-A | Method Blank | 94 | 91 |
| MB 880-26827/5-A | Method Blank | 93 | 91 |

**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) |
| 880-15469-A-1-B MS | Matrix Spike | 75 | 67 S1- |
| 880-15469-A-1-C MSD | Matrix Spike Duplicate | 86 | 76 |
| 880-15629-A-21-C MS | Matrix Spike | 73 | 7 S1- |
| 880-15629-A-21-D MSD | Matrix Spike Duplicate | 74 | 8 S1- |
| 890-2361-A-27-B MS | Matrix Spike | 118 | 122 |
| 890-2361-A-27-C MSD | Matrix Spike Duplicate | 114 | 119 |
| 890-2365-1 | FS01 | 99 | 96 |
| 890-2365-2 | FS02 | 97 | 96 |
| 890-2365-3 | FS03 | 101 | 97 |
| 890-2365-4 | FS04 | 72 | 75 |
| LCS 880-26686/2-A | Lab Control Sample | 114 | 116 |
| LCS 880-26872/2-A | Lab Control Sample | 105 | 104 |
| LCS 880-27167/2-A | Lab Control Sample | 92 | 13 S1- |
| LCSD 880-26686/3-A | Lab Control Sample Dup | 114 | 116 |
| LCSD 880-26872/3-A | Lab Control Sample Dup | 103 | 103 |
| LCSD 880-27167/3-A | Lab Control Sample Dup | 95 | 91 |
| MB 880-26686/1-A | Method Blank | 100 | 108 |
| MB 880-26872/1-A | Method Blank | 93 | 103 |
| MB 880-27167/1-A | Method Blank | 74 | 82 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26742/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/02/22 13:19 | 06/04/22 09:01 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 09:01* | *1* |
| *1,4-Difluorobenzene (Surr)* | *90* | | *70 - 130* | *06/02/22 13:19* | *06/04/22 09:01* | *1* |

**Lab Sample ID: LCS 880-26742/1-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.08689 | | mg/Kg | | 87 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08352 | | mg/Kg | | 84 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08568 | | mg/Kg | | 86 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1693 | | mg/Kg | | 85 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09262 | | mg/Kg | | 93 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26742/2-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26742**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09661 | | mg/Kg | | 97 | 70 - 130 | 11 | 35 |
| Toluene | | | 0.100 | 0.09185 | | mg/Kg | | 92 | 70 - 130 | 10 | 35 |
| Ethylbenzene | | | 0.100 | 0.09186 | | mg/Kg | | 92 | 70 - 130 | 7 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1786 | | mg/Kg | | 89 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.09290 | | mg/Kg | | 93 | 70 - 130 | 0 | 35 |

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

**Lab Sample ID: MB 880-26788/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26788**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26788/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26788**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* | *06/03/22 09:28* | *06/03/22 11:47* | *1* |
| *1,4-Difluorobenzene (Surr)* | *91* | | *70 - 130* | *06/03/22 09:28* | *06/03/22 11:47* | *1* |

**Lab Sample ID: MB 880-26827/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *93* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 22:24* | *1* |
| *1,4-Difluorobenzene (Surr)* | *91* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 22:24* | *1* |

**Lab Sample ID: LCS 880-26827/1-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09216 | | mg/Kg | | 92 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08828 | | mg/Kg | | 88 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09094 | | mg/Kg | | 91 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1744 | | mg/Kg | | 87 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09416 | | mg/Kg | | 94 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26827/2-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09492 | | mg/Kg | | 95 | 70 - 130 | 3 | 35 |
| Toluene | | | 0.100 | 0.08896 | | mg/Kg | | 89 | 70 - 130 | 1 | 35 |
| Ethylbenzene | | | 0.100 | 0.09117 | | mg/Kg | | 91 | 70 - 130 | 0 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

**Lab Sample ID: LCSD 880-26827/2-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m-Xylene & p-Xylene | | | 0.200 | 0.1757 | | mg/Kg | | 88 | 70 - 130 | 1 | 35 |
| o-Xylene | | | 0.100 | 0.09401 | | mg/Kg | | 94 | 70 - 130 | 0 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* |

**Lab Sample ID: 890-2365-3 MS**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: FS03**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U F1 F2 | 0.100 | 0.04998 | F1 | mg/Kg | | 49 | 70 - 130 | | |
| Toluene | 0.0122 | F1 F2 | 0.100 | 0.05019 | F1 | mg/Kg | | 38 | 70 - 130 | | |
| Ethylbenzene | <0.00200 | U F1 F2 | 0.100 | 0.04600 | F1 | mg/Kg | | 44 | 70 - 130 | | |
| m-Xylene & p-Xylene | 0.0111 | F1 | 0.200 | 0.09790 | F1 | mg/Kg | | 43 | 70 - 130 | | |
| o-Xylene | <0.00200 | U F1 | 0.100 | 0.05326 | F1 | mg/Kg | | 52 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: 890-2365-3 MSD**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: FS03**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U F1 F2 | 0.0996 | 0.07616 | F2 | mg/Kg | | 76 | 70 - 130 | 42 | 35 |
| Toluene | 0.0122 | F1 F2 | 0.0996 | 0.07257 | F1 F2 | mg/Kg | | 61 | 70 - 130 | 36 | 35 |
| Ethylbenzene | <0.00200 | U F1 F2 | 0.0996 | 0.06858 | F1 F2 | mg/Kg | | 67 | 70 - 130 | 39 | 35 |
| m-Xylene & p-Xylene | 0.0111 | F1 | 0.199 | 0.1365 | F1 | mg/Kg | | 63 | 70 - 130 | 33 | 35 |
| o-Xylene | <0.00200 | U F1 | 0.0996 | 0.06710 | F1 | mg/Kg | | 66 | 70 - 130 | 23 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* |

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

**Lab Sample ID: MB 880-26686/1-A**
**Matrix: Solid**
**Analysis Batch: 26698**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26686**

| 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 | | 06/01/22 16:47 | 06/02/22 10:38 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 10:38 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/01/22 16:47 | 06/02/22 10:38 | 1 |

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# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 100 | | 70 - 130 | 06/01/22 16:47 | 06/02/22 10:38 | 1 |
| o-Terphenyl | 108 | | 70 - 130 | 06/01/22 16:47 | 06/02/22 10:38 | 1 |

**Lab Sample ID: LCS 880-26686/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26698** — **Prep Batch: 26686**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 912.2 | | mg/Kg | | 91 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 981.2 | | mg/Kg | | 98 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 114 | | 70 - 130 |
| o-Terphenyl | 116 | | 70 - 130 |

**Lab Sample ID: LCSD 880-26686/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26698** — **Prep Batch: 26686**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 920.1 | | mg/Kg | | 92 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 999.8 | | mg/Kg | | 100 | 70 - 130 | 2 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 114 | | 70 - 130 |
| o-Terphenyl | 116 | | 70 - 130 |

**Lab Sample ID: 890-2361-A-27-B MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26698** — **Prep Batch: 26686**

| 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 F1 | 997 | 1303 | | mg/Kg | | 127 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 997 | 1216 | | mg/Kg | | 122 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 118 | | 70 - 130 |
| o-Terphenyl | 122 | | 70 - 130 |

**Lab Sample ID: 890-2361-A-27-C MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26698** — **Prep Batch: 26686**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U F1 | 1000 | 1390 | F1 | mg/Kg | | 135 | 70 - 130 | 6 | 20 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

**Lab Sample ID: 890-2361-A-27-C MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26698** — **Prep Batch: 26686**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 1000 | 1190 | | mg/Kg | | 119 | 70 - 130 | 2 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *114* | | *70 - 130* |
| *o-Terphenyl* | *119* | | *70 - 130* |

**Lab Sample ID: MB 880-26872/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26868** — **Prep Batch: 26872**

| 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 | | 06/06/22 08:40 | 06/06/22 21:55 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 06/06/22 08:40 | 06/06/22 21:55 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/06/22 08:40 | 06/06/22 21:55 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *93* | | *70 - 130* | *06/06/22 08:40* | *06/06/22 21:55* | *1* |
| *o-Terphenyl* | *103* | | *70 - 130* | *06/06/22 08:40* | *06/06/22 21:55* | *1* |

**Lab Sample ID: LCS 880-26872/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26868** — **Prep Batch: 26872**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 753.8 | | mg/Kg | | 75 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1025 | | mg/Kg | | 102 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *105* | | *70 - 130* |
| *o-Terphenyl* | *104* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26872/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26868** — **Prep Batch: 26872**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 715.7 | | mg/Kg | | 72 | 70 - 130 | 5 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1008 | | mg/Kg | | 101 | 70 - 130 | 2 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *103* | | *70 - 130* |
| *o-Terphenyl* | *103* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

**Lab Sample ID: 880-15469-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 26868**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 26872**

| 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 | 997 | 800.5 | | mg/Kg | | 80 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 62.4 | | 997 | 929.7 | | mg/Kg | | 87 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *75* | | *70 - 130* |
| *o-Terphenyl* | *67* | *S1-* | *70 - 130* |

**Lab Sample ID: 880-15469-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 26868**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 26872**

| 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 | 1000 | 923.7 | | mg/Kg | | 92 | 70 - 130 | 14 | 20 |
| Diesel Range Organics (Over C10-C28) | 62.4 | | 1000 | 1128 | | mg/Kg | | 107 | 70 - 130 | 19 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *86* | | *70 - 130* |
| *o-Terphenyl* | *76* | | *70 - 130* |

**Lab Sample ID: MB 880-27167/1-A**
**Matrix: Solid**
**Analysis Batch: 27244**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 27167**

| 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 | | 06/09/22 10:13 | 06/10/22 10:28 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 06/09/22 10:13 | 06/10/22 10:28 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/09/22 10:13 | 06/10/22 10:28 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *74* | | *70 - 130* | *06/09/22 10:13* | *06/10/22 10:28* | *1* |
| *o-Terphenyl* | *82* | | *70 - 130* | *06/09/22 10:13* | *06/10/22 10:28* | *1* |

**Lab Sample ID: LCS 880-27167/2-A**
**Matrix: Solid**
**Analysis Batch: 27244**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 27167**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 1000 | 872.5 | | mg/Kg | | 87 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 1000 | 1086 | | mg/Kg | | 109 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

**Lab Sample ID: LCS 880-27167/2-A**
**Matrix: Solid**
**Analysis Batch: 27244**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 27167**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 92 | | 70 - 130 |
| o-Terphenyl | 13 | S1- | 70 - 130 |

**Lab Sample ID: LCSD 880-27167/3-A**
**Matrix: Solid**
**Analysis Batch: 27244**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 27167**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 887.3 | | mg/Kg | | 89 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1084 | | mg/Kg | | 108 | 70 - 130 | 0 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 95 | | 70 - 130 |
| o-Terphenyl | 91 | | 70 - 130 |

**Lab Sample ID: 880-15629-A-21-C MS**
**Matrix: Solid**
**Analysis Batch: 27244**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 27167**

| 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 F1 | 997 | 644.5 | F1 | mg/Kg | | 65 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 997 | 711.7 | F1 | mg/Kg | | 67 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 73 | | 70 - 130 |
| o-Terphenyl | 7 | S1- | 70 - 130 |

**Lab Sample ID: 880-15629-A-21-D MSD**
**Matrix: Solid**
**Analysis Batch: 27244**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 27167**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U F1 | 1000 | 720.3 | | mg/Kg | | 72 | 70 - 130 | 11 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 1000 | 734.3 | F1 | mg/Kg | | 69 | 70 - 130 | 3 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 74 | | 70 - 130 |
| o-Terphenyl | 8 | S1- | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-26738/1-A**
**Matrix: Solid**
**Analysis Batch: 26786**

**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 | | | 06/04/22 14:50 | 1 |

**Lab Sample ID: LCS 880-26738/2-A**
**Matrix: Solid**
**Analysis Batch: 26786**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 225.5 | | mg/Kg | | 90 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-26738/3-A**
**Matrix: Solid**
**Analysis Batch: 26786**

**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 | 228.2 | | mg/Kg | | 91 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-2363-A-5-C MS**
**Matrix: Solid**
**Analysis Batch: 26786**

**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 | 324 | F1 | 248 | 522.4 | F1 | mg/Kg | | 80 | 90 - 110 | | |

**Lab Sample ID: 890-2363-A-5-D MSD**
**Matrix: Solid**
**Analysis Batch: 26786**

**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 | 324 | F1 | 248 | 541.4 | F1 | mg/Kg | | 88 | 90 - 110 | 4 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## GC VOA

### Prep Batch: 26742

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Total/NA | Solid | 5035 | |
| 890-2365-2 | FS02 | Total/NA | Solid | 5035 | |
| MB 880-26742/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-26742/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-26742/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |

### Analysis Batch: 26785

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Total/NA | Solid | 8021B | 26742 |
| 890-2365-2 | FS02 | Total/NA | Solid | 8021B | 26742 |
| 890-2365-3 | FS03 | Total/NA | Solid | 8021B | 26827 |
| 890-2365-4 | FS04 | Total/NA | Solid | 8021B | 26827 |
| MB 880-26742/5-A | Method Blank | Total/NA | Solid | 8021B | 26742 |
| MB 880-26788/5-A | Method Blank | Total/NA | Solid | 8021B | 26788 |
| MB 880-26827/5-A | Method Blank | Total/NA | Solid | 8021B | 26827 |
| LCS 880-26742/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 26742 |
| LCS 880-26827/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 26827 |
| LCSD 880-26742/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 26742 |
| LCSD 880-26827/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 26827 |
| 890-2365-3 MS | FS03 | Total/NA | Solid | 8021B | 26827 |
| 890-2365-3 MSD | FS03 | Total/NA | Solid | 8021B | 26827 |

### Prep Batch: 26788

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-26788/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 26827

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-3 | FS03 | Total/NA | Solid | 5035 | |
| 890-2365-4 | FS04 | Total/NA | Solid | 5035 | |
| MB 880-26827/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-26827/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-26827/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2365-3 MS | FS03 | Total/NA | Solid | 5035 | |
| 890-2365-3 MSD | FS03 | Total/NA | Solid | 5035 | |

### Analysis Batch: 26917

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Total/NA | Solid | Total BTEX | |
| 890-2365-2 | FS02 | Total/NA | Solid | Total BTEX | |
| 890-2365-3 | FS03 | Total/NA | Solid | Total BTEX | |
| 890-2365-4 | FS04 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 26686

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Total/NA | Solid | 8015NM Prep | |
| 890-2365-2 | FS02 | Total/NA | Solid | 8015NM Prep | |
| 890-2365-3 | FS03 | Total/NA | Solid | 8015NM Prep | |
| MB 880-26686/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## GC Semi VOA (Continued)

### Prep Batch: 26686 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCS 880-26686/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-26686/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2361-A-27-B MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2361-A-27-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 26698

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Total/NA | Solid | 8015B NM | 26686 |
| 890-2365-2 | FS02 | Total/NA | Solid | 8015B NM | 26686 |
| 890-2365-3 | FS03 | Total/NA | Solid | 8015B NM | 26686 |
| MB 880-26686/1-A | Method Blank | Total/NA | Solid | 8015B NM | 26686 |
| LCS 880-26686/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 26686 |
| LCSD 880-26686/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 26686 |
| 890-2361-A-27-B MS | Matrix Spike | Total/NA | Solid | 8015B NM | 26686 |
| 890-2361-A-27-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 26686 |

### Analysis Batch: 26765

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Total/NA | Solid | 8015 NM | |
| 890-2365-2 | FS02 | Total/NA | Solid | 8015 NM | |
| 890-2365-3 | FS03 | Total/NA | Solid | 8015 NM | |
| 890-2365-4 | FS04 | Total/NA | Solid | 8015 NM | |

### Analysis Batch: 26868

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-26872/1-A | Method Blank | Total/NA | Solid | 8015B NM | 26872 |
| LCS 880-26872/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 26872 |
| LCSD 880-26872/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 26872 |
| 880-15469-A-1-B MS | Matrix Spike | Total/NA | Solid | 8015B NM | 26872 |
| 880-15469-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 26872 |

### Prep Batch: 26872

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-26872/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-26872/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-26872/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-15469-A-1-B MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-15469-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Prep Batch: 27167

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-4 | FS04 | Total/NA | Solid | 8015NM Prep | |
| MB 880-27167/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-27167/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-27167/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-15629-A-21-C MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-15629-A-21-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 27244

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-4 | FS04 | Total/NA | Solid | 8015B NM | 27167 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## GC Semi VOA (Continued)

### Analysis Batch: 27244 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-27167/1-A | Method Blank | Total/NA | Solid | 8015B NM | 27167 |
| LCS 880-27167/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 27167 |
| LCSD 880-27167/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 27167 |
| 880-15629-A-21-C MS | Matrix Spike | Total/NA | Solid | 8015B NM | 27167 |
| 880-15629-A-21-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 27167 |

## HPLC/IC

### Leach Batch: 26738

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Soluble | Solid | DI Leach | |
| 890-2365-2 | FS02 | Soluble | Solid | DI Leach | |
| 890-2365-3 | FS03 | Soluble | Solid | DI Leach | |
| 890-2365-4 | FS04 | Soluble | Solid | DI Leach | |
| MB 880-26738/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-26738/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-26738/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-2363-A-5-C MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-2363-A-5-D MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 26786

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Soluble | Solid | 300.0 | 26738 |
| 890-2365-2 | FS02 | Soluble | Solid | 300.0 | 26738 |
| 890-2365-3 | FS03 | Soluble | Solid | 300.0 | 26738 |
| 890-2365-4 | FS04 | Soluble | Solid | 300.0 | 26738 |
| MB 880-26738/1-A | Method Blank | Soluble | Solid | 300.0 | 26738 |
| LCS 880-26738/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 26738 |
| LCSD 880-26738/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 26738 |
| 890-2363-A-5-C MS | Matrix Spike | Soluble | Solid | 300.0 | 26738 |
| 890-2363-A-5-D MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 26738 |

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Client Sample ID: FS01
**Date Collected: 05/31/22 14:25**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2365-1
**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 | 26742 | 06/02/22 13:19 | EL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/04/22 10:03 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26917 | 06/06/22 12:13 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26765 | 06/02/22 17:22 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 26686 | 06/01/22 16:47 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26698 | 06/02/22 17:02 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 18:48 | CH | XEN MID |

## Client Sample ID: FS02
**Date Collected: 05/31/22 15:10**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2365-2
**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 | 26742 | 06/02/22 13:19 | EL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/04/22 10:24 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26917 | 06/06/22 12:13 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26765 | 06/02/22 17:22 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 26686 | 06/01/22 16:47 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26698 | 06/02/22 17:23 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 4.96 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 19:16 | CH | XEN MID |

## Client Sample ID: FS03
**Date Collected: 05/31/22 15:15**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2365-3
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.99 g | 5 mL | 26827 | 06/03/22 14:04 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/03/22 22:46 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26917 | 06/06/22 12:13 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26765 | 06/02/22 17:22 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.04 g | 10 mL | 26686 | 06/01/22 16:47 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26698 | 06/02/22 16:19 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 4.97 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 19:25 | CH | XEN MID |

## Client Sample ID: FS04
**Date Collected: 05/31/22 15:20**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2365-4
**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 | | | 5.01 g | 5 mL | 26827 | 06/03/22 14:04 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/03/22 23:07 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26917 | 06/06/22 12:13 | SM | XEN MID |

Eurofins Carlsbad

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## Client Sample ID: FS04
**Date Collected: 05/31/22 15:20**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2365-4
**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 | | | 26765 | 06/02/22 17:22 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 27167 | 06/09/22 10:13 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 27244 | 06/10/22 19:51 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 19:34 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

## 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 | T104704400-21-22 | 06-30-22 |

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: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

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

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

# Sample Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2365-1
SDG: 03E1558021

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2365-1 | FS01 | Solid | 05/31/22 14:25 | 06/01/22 09:07 | 0.75' |
| 890-2365-2 | FS02 | Solid | 05/31/22 15:10 | 06/01/22 09:07 | 0.75' |
| 890-2365-3 | FS03 | Solid | 05/31/22 15:15 | 06/01/22 09:07 | 0.75' |
| 890-2365-4 | FS04 | Solid | 05/31/22 15:20 | 06/01/22 09:07 | 0.75' |

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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: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | Ensolum LLC. | Company Name: | XTO Energy, Inc. |
| Address: | | Address: | 3104 E. Green Street |
| City, State ZIP: | | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 817.683.2503 | Email: | |

**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: | BEU 5E Han Solo 114H | Turn Around | Pres. Code |
| Project Number: | 03E1558021 | ☑ Routine ☒ Rush | |
| Project Location: | | Due Date: 3DAY TAT | |
| 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: | T-NM-007 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 2.6 |
| Total Containers: | | Corrected Temperature: | 2.4 |

**ANALYSIS REQUEST**


**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 | CHLORIDES (EPA: 300.0) | TPH (8015) | BTEX (8021) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| FS01 | s | 05.31.22 | 1425 | 0.75' | G | 1 | x | x | x | Incident ID:NAPP2209041753 |
| FS02 | s | 05.31.22 | 1510 | 0.75' | G | 1 | x | x | x | |
| FS03 | s | 05.31.22 | 1515 | 0.75' | G | 1 | x | x | x | Cost Center:1606761001 |
| FS04 | s | 05.31.22 | 1520 | 0.75' | G | 1 | x | x | x | |
| | | | | | | | | | | AFE: |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr 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 Sluyter | 6-1-22 9:0 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2365-1
SDG Number: 03E1558021

**Login Number: 2365**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2365-1
SDG Number: 03E1558021

**Login Number: 2365**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 06/02/22 11:42 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

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

Laboratory Job ID: 890-2366-1
Laboratory Sample Delivery Group: 03E1558021
Client Project/Site: BEU 5E Han Solo 114H

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*6/6/2022 11:47:00 AM*

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



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

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

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Laboratory Job ID: 890-2366-1
SDG: 03E1558021

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

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

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| 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: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## Job ID: 890-2366-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2366-1**

**Receipt**
The samples were received on 6/1/2022 9:07 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 2.4°C

**GC VOA**
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26827 and analytical batch 880-26785 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.

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-15387-A-1-C MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS04 (890-2366-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-26719 and analytical batch 880-26700 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS06 (890-2366-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

**HPLC/IC**
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26738 and analytical batch 880-26786 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: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## Client Sample ID: SS04

**Lab Sample ID: 890-2366-1**
**Matrix: Solid**
**Date Collected: 05/31/22 13:50**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.5'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:27 | 1 |
| **Toluene** | **0.00354** | | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:27 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:27 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:27 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:27 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 23:27* | *1* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 23:27* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 06/06/22 12:13 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **58.2** | | 50.0 | | mg/Kg | | | 06/02/22 17:28 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 15:15 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **58.2** | | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 15:15 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 15:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *76* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 15:15* | *1* |
| *o-Terphenyl* | *69* | *S1-* | *70 - 130* | *06/02/22 13:00* | *06/02/22 15:15* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **270** | | 24.8 | | mg/Kg | | | 06/04/22 19:44 | 5 |

## Client Sample ID: SS05

**Lab Sample ID: 890-2366-2**
**Matrix: Solid**
**Date Collected: 05/31/22 13:55**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.5'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | U | 0.00198 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:48 | 1 |
| **Toluene** | **0.0144** | | 0.00198 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:48 | 1 |
| **Ethylbenzene** | **0.00213** | | 0.00198 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:48 | 1 |
| **m-Xylene & p-Xylene** | **0.0244** | | 0.00397 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:48 | 1 |
| **o-Xylene** | **0.00407** | | 0.00198 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:48 | 1 |
| **Xylenes, Total** | **0.0285** | | 0.00397 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 23:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 23:48* | *1* |

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# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## Client Sample ID: SS05

**Lab Sample ID: 890-2366-2**
**Matrix: Solid**
**Date Collected: 05/31/22 13:55**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.5'**

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

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 23:48* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.0450** | | 0.00397 | | mg/Kg | | | 06/06/22 12:13 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **66.9** | | 50.0 | | mg/Kg | | | 06/02/22 17:28 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Organics (GRO)-C6-C10** | **66.9** | | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 16:41 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 16:41 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 16:41 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *82* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 16:41* | *1* |
| *o-Terphenyl* | *75* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 16:41* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **187** | | 4.99 | | mg/Kg | | | 06/04/22 19:53 | 1 |

## Client Sample ID: SS06

**Lab Sample ID: 890-2366-3**
**Matrix: Solid**
**Date Collected: 05/31/22 14:00**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.5'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:08 | 1 |
| **Toluene** | **0.00211** | | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:08 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:08 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:08 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:08 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:08 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* | *06/03/22 14:04* | *06/04/22 00:08* | *1* |
| *1,4-Difluorobenzene (Surr)* | *86* | | *70 - 130* | *06/03/22 14:04* | *06/04/22 00:08* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 06/06/22 12:13 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 06/02/22 17:28 | 1 |

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# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## Client Sample ID: SS06

**Lab Sample ID: 890-2366-3**
**Matrix: Solid**
**Date Collected: 05/31/22 14:00**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.5'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 17:02 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 17:02 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 17:02 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *73* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 17:02* | *1* |
| *o-Terphenyl* | *66* | *S1-* | *70 - 130* | *06/02/22 13:00* | *06/02/22 17:02* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **487** | | 4.97 | | mg/Kg | | | 06/04/22 20:02 | 1 |

## Client Sample ID: SS07

**Lab Sample ID: 890-2366-4**
**Matrix: Solid**
**Date Collected: 05/31/22 14:05**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.5'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:29 | 1 |
| **Toluene** | **0.00505** | | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:29 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:29 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:29 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:29 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 06/03/22 14:04 | 06/04/22 00:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *70 - 130* | *06/03/22 14:04* | *06/04/22 00:29* | *1* |
| *1,4-Difluorobenzene (Surr)* | *99* | | *70 - 130* | *06/03/22 14:04* | *06/04/22 00:29* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total BTEX** | **0.00505** | | 0.00398 | | mg/Kg | | | 06/06/22 12:13 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 06/02/22 17:28 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 17:23 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 17:23 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 06/02/22 13:00 | 06/02/22 17:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *93* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 17:23* | *1* |
| *o-Terphenyl* | *91* | | *70 - 130* | *06/02/22 13:00* | *06/02/22 17:23* | *1* |

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# Client Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

**Client Sample ID: SS07**
**Date Collected: 05/31/22 14:05**
**Date Received: 06/01/22 09:07**
**Sample Depth: 0.5'**

**Lab Sample ID: 890-2366-4**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 166 | | 4.99 | | mg/Kg | | | 06/04/22 20:11 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## 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) |
| 890-2365-A-3-D MS | Matrix Spike | 104 | 100 |
| 890-2365-A-3-E MSD | Matrix Spike Duplicate | 102 | 101 |
| 890-2366-1 | SS04 | 99 | 94 |
| 890-2366-2 | SS05 | 102 | 88 |
| 890-2366-3 | SS06 | 110 | 86 |
| 890-2366-4 | SS07 | 96 | 99 |
| LCS 880-26827/1-A | Lab Control Sample | 101 | 102 |
| LCSD 880-26827/2-A | Lab Control Sample Dup | 102 | 104 |
| MB 880-26788/5-A | Method Blank | 94 | 91 |
| MB 880-26827/5-A | Method Blank | 93 | 91 |

**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) |
| 880-15387-A-1-C MS | Matrix Spike | 77 | 69 S1- |
| 880-15387-A-1-D MSD | Matrix Spike Duplicate | 78 | 70 |
| 890-2366-1 | SS04 | 76 | 69 S1- |
| 890-2366-2 | SS05 | 82 | 75 |
| 890-2366-3 | SS06 | 73 | 66 S1- |
| 890-2366-4 | SS07 | 93 | 91 |
| LCS 880-26719/2-A | Lab Control Sample | 118 | 114 |
| LCSD 880-26719/3-A | Lab Control Sample Dup | 114 | 113 |
| MB 880-26719/1-A | Method Blank | 98 | 109 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26788/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26788**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 09:28 | 06/03/22 11:47 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* | *06/03/22 09:28* | *06/03/22 11:47* | *1* |
| *1,4-Difluorobenzene (Surr)* | *91* | | *70 - 130* | *06/03/22 09:28* | *06/03/22 11:47* | *1* |

**Lab Sample ID: MB 880-26827/5-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 06/03/22 14:04 | 06/03/22 22:24 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *93* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 22:24* | *1* |
| *1,4-Difluorobenzene (Surr)* | *91* | | *70 - 130* | *06/03/22 14:04* | *06/03/22 22:24* | *1* |

**Lab Sample ID: LCS 880-26827/1-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09216 | | mg/Kg | | 92 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08828 | | mg/Kg | | 88 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09094 | | mg/Kg | | 91 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1744 | | mg/Kg | | 87 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09416 | | mg/Kg | | 94 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26827/2-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09492 | | mg/Kg | | 95 | 70 - 130 | 3 | 35 |

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# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

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

**Lab Sample ID: LCSD 880-26827/2-A**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.08896 | | mg/Kg | | 89 | 70 - 130 | 1 | 35 |
| Ethylbenzene | | | 0.100 | 0.09117 | | mg/Kg | | 91 | 70 - 130 | 0 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1757 | | mg/Kg | | 88 | 70 - 130 | 1 | 35 |
| o-Xylene | | | 0.100 | 0.09401 | | mg/Kg | | 94 | 70 - 130 | 0 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* |

**Lab Sample ID: 890-2365-A-3-D MS**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U F1 F2 | 0.100 | 0.04998 | F1 | mg/Kg | | 49 | 70 - 130 |
| Toluene | 0.0122 | F1 F2 | 0.100 | 0.05019 | F1 | mg/Kg | | 38 | 70 - 130 |
| Ethylbenzene | <0.00200 | U F1 F2 | 0.100 | 0.04600 | F1 | mg/Kg | | 44 | 70 - 130 |
| m-Xylene & p-Xylene | 0.0111 | F1 | 0.200 | 0.09790 | F1 | mg/Kg | | 43 | 70 - 130 |
| o-Xylene | <0.00200 | U F1 | 0.100 | 0.05326 | F1 | mg/Kg | | 52 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: 890-2365-A-3-E MSD**
**Matrix: Solid**
**Analysis Batch: 26785**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 26827**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U F1 F2 | 0.0996 | 0.07616 | F2 | mg/Kg | | 76 | 70 - 130 | 42 | 35 |
| Toluene | 0.0122 | F1 F2 | 0.0996 | 0.07257 | F1 F2 | mg/Kg | | 61 | 70 - 130 | 36 | 35 |
| Ethylbenzene | <0.00200 | U F1 F2 | 0.0996 | 0.06858 | F1 F2 | mg/Kg | | 67 | 70 - 130 | 39 | 35 |
| m-Xylene & p-Xylene | 0.0111 | F1 | 0.199 | 0.1365 | F1 | mg/Kg | | 63 | 70 - 130 | 33 | 35 |
| o-Xylene | <0.00200 | U F1 | 0.0996 | 0.06710 | F1 | mg/Kg | | 66 | 70 - 130 | 23 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* |

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

**Lab Sample ID: MB 880-26719/1-A**
**Matrix: Solid**
**Analysis Batch: 26700**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 26719**

| 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 | | 06/02/22 10:21 | 06/02/22 10:38 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-26719/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26700** — **Prep Batch: 26719**

| 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 | | 06/02/22 10:21 | 06/02/22 10:38 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 06/02/22 10:21 | 06/02/22 10:38 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *98* | | *70 - 130* | *06/02/22 10:21* | *06/02/22 10:38* | *1* |
| *o-Terphenyl* | *109* | | *70 - 130* | *06/02/22 10:21* | *06/02/22 10:38* | *1* |

**Lab Sample ID: LCS 880-26719/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26700** — **Prep Batch: 26719**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 959.3 | | mg/Kg | | 96 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 877.7 | | mg/Kg | | 88 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *118* | | *70 - 130* |
| *o-Terphenyl* | *114* | | *70 - 130* |

**Lab Sample ID: LCSD 880-26719/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26700** — **Prep Batch: 26719**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 932.6 | | mg/Kg | | 93 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 854.9 | | mg/Kg | | 85 | 70 - 130 | 3 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *114* | | *70 - 130* |
| *o-Terphenyl* | *113* | | *70 - 130* |

**Lab Sample ID: 880-15387-A-1-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26700** — **Prep Batch: 26719**

| 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 | 997 | 813.3 | | mg/Kg | | 78 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 997 | 668.9 | F1 | mg/Kg | | 67 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *77* | | *70 - 130* |
| *o-Terphenyl* | *69* | *S1-* | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

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

**Lab Sample ID: 880-15387-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 26700** — **Prep Batch: 26719**

| 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 | 1000 | 805.1 | | mg/Kg | | 77 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 1000 | 686.7 | F1 | mg/Kg | | 69 | 70 - 130 | 3 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *78* | | *70 - 130* |
| *o-Terphenyl* | *70* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-26738/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 26786**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 06/04/22 14:50 | 1 |

**Lab Sample ID: LCS 880-26738/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 26786**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 225.5 | | mg/Kg | | 90 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-26738/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 26786**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 228.2 | | mg/Kg | | 91 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 880-15398-A-32-B MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 26786**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 1020 | | 1250 | 2283 | | mg/Kg | | 102 | 90 - 110 | | |

**Lab Sample ID: 880-15398-A-32-C MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 26786**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 1020 | | 1250 | 2347 | | mg/Kg | | 107 | 90 - 110 | 3 | 20 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 890-2363-A-5-C MS**
**Matrix: Solid**
**Analysis Batch: 26786**

**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 | 324 | F1 | 248 | 522.4 | F1 | mg/Kg | | 80 | 90 - 110 | | |

**Lab Sample ID: 890-2363-A-5-D MSD**
**Matrix: Solid**
**Analysis Batch: 26786**

**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 | 324 | F1 | 248 | 541.4 | F1 | mg/Kg | | 88 | 90 - 110 | 4 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## GC VOA

### Analysis Batch: 26785

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Total/NA | Solid | 8021B | 26827 |
| 890-2366-2 | SS05 | Total/NA | Solid | 8021B | 26827 |
| 890-2366-3 | SS06 | Total/NA | Solid | 8021B | 26827 |
| 890-2366-4 | SS07 | Total/NA | Solid | 8021B | 26827 |
| MB 880-26788/5-A | Method Blank | Total/NA | Solid | 8021B | 26788 |
| MB 880-26827/5-A | Method Blank | Total/NA | Solid | 8021B | 26827 |
| LCS 880-26827/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 26827 |
| LCSD 880-26827/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 26827 |
| 890-2365-A-3-D MS | Matrix Spike | Total/NA | Solid | 8021B | 26827 |
| 890-2365-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 26827 |

### Prep Batch: 26788

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-26788/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 26827

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Total/NA | Solid | 5035 | |
| 890-2366-2 | SS05 | Total/NA | Solid | 5035 | |
| 890-2366-3 | SS06 | Total/NA | Solid | 5035 | |
| 890-2366-4 | SS07 | Total/NA | Solid | 5035 | |
| MB 880-26827/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-26827/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-26827/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2365-A-3-D MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-2365-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 26918

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Total/NA | Solid | Total BTEX | |
| 890-2366-2 | SS05 | Total/NA | Solid | Total BTEX | |
| 890-2366-3 | SS06 | Total/NA | Solid | Total BTEX | |
| 890-2366-4 | SS07 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 26700

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Total/NA | Solid | 8015B NM | 26719 |
| 890-2366-2 | SS05 | Total/NA | Solid | 8015B NM | 26719 |
| 890-2366-3 | SS06 | Total/NA | Solid | 8015B NM | 26719 |
| 890-2366-4 | SS07 | Total/NA | Solid | 8015B NM | 26719 |
| MB 880-26719/1-A | Method Blank | Total/NA | Solid | 8015B NM | 26719 |
| LCS 880-26719/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 26719 |
| LCSD 880-26719/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 26719 |
| 880-15387-A-1-C MS | Matrix Spike | Total/NA | Solid | 8015B NM | 26719 |
| 880-15387-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 26719 |

### Prep Batch: 26719

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Total/NA | Solid | 8015NM Prep | |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## GC Semi VOA (Continued)

### Prep Batch: 26719 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-2 | SS05 | Total/NA | Solid | 8015NM Prep | |
| 890-2366-3 | SS06 | Total/NA | Solid | 8015NM Prep | |
| 890-2366-4 | SS07 | Total/NA | Solid | 8015NM Prep | |
| MB 880-26719/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-26719/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-26719/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-15387-A-1-C MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-15387-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 26770

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Total/NA | Solid | 8015 NM | |
| 890-2366-2 | SS05 | Total/NA | Solid | 8015 NM | |
| 890-2366-3 | SS06 | Total/NA | Solid | 8015 NM | |
| 890-2366-4 | SS07 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 26738

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Soluble | Solid | DI Leach | |
| 890-2366-2 | SS05 | Soluble | Solid | DI Leach | |
| 890-2366-3 | SS06 | Soluble | Solid | DI Leach | |
| 890-2366-4 | SS07 | Soluble | Solid | DI Leach | |
| MB 880-26738/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-26738/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-26738/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-15398-A-32-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-15398-A-32-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |
| 890-2363-A-5-C MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-2363-A-5-D MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 26786

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Soluble | Solid | 300.0 | 26738 |
| 890-2366-2 | SS05 | Soluble | Solid | 300.0 | 26738 |
| 890-2366-3 | SS06 | Soluble | Solid | 300.0 | 26738 |
| 890-2366-4 | SS07 | Soluble | Solid | 300.0 | 26738 |
| MB 880-26738/1-A | Method Blank | Soluble | Solid | 300.0 | 26738 |
| LCS 880-26738/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 26738 |
| LCSD 880-26738/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 26738 |
| 880-15398-A-32-B MS | Matrix Spike | Soluble | Solid | 300.0 | 26738 |
| 880-15398-A-32-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 26738 |
| 890-2363-A-5-C MS | Matrix Spike | Soluble | Solid | 300.0 | 26738 |
| 890-2363-A-5-D MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 26738 |

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## Client Sample ID: SS04

**Date Collected: 05/31/22 13:50**
**Date Received: 06/01/22 09:07**

**Lab Sample ID: 890-2366-1**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.03 g | 5 mL | 26827 | 06/03/22 14:04 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/03/22 23:27 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26918 | 06/06/22 12:13 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26770 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 15:15 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.05 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 5 | | | 26786 | 06/04/22 19:44 | CH | XEN MID |

## Client Sample ID: SS05

**Date Collected: 05/31/22 13:55**
**Date Received: 06/01/22 09:07**

**Lab Sample ID: 890-2366-2**
**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 | | | 5.04 g | 5 mL | 26827 | 06/03/22 14:04 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/03/22 23:48 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26918 | 06/06/22 12:13 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26770 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 16:41 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 19:53 | CH | XEN MID |

## Client Sample ID: SS06

**Date Collected: 05/31/22 14:00**
**Date Received: 06/01/22 09:07**

**Lab Sample ID: 890-2366-3**
**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 | 26827 | 06/03/22 14:04 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/04/22 00:08 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26918 | 06/06/22 12:13 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 26770 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 17:02 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 20:02 | CH | XEN MID |

## Client Sample ID: SS07

**Date Collected: 05/31/22 14:05**
**Date Received: 06/01/22 09:07**

**Lab Sample ID: 890-2366-4**
**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 | 26827 | 06/03/22 14:04 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 0 mL | 1.0 mL | 26785 | 06/04/22 00:29 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 26918 | 06/06/22 12:13 | SM | XEN MID |

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## Client Sample ID: SS07

**Date Collected: 05/31/22 14:05**
**Date Received: 06/01/22 09:07**

## Lab Sample ID: 890-2366-4

**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 | | | 26770 | 06/02/22 17:28 | SM | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 26719 | 06/02/22 13:00 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 26700 | 06/02/22 17:23 | SM | XEN MID |
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 26738 | 06/02/22 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 26786 | 06/04/22 20:11 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

## 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 | T104704400-21-22 | 06-30-22 |

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: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

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

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

# Sample Summary

Client: Ensolum
Project/Site: BEU 5E Han Solo 114H

Job ID: 890-2366-1
SDG: 03E1558021

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2366-1 | SS04 | Solid | 05/31/22 13:50 | 06/01/22 09:07 | 0.5' |
| 890-2366-2 | SS05 | Solid | 05/31/22 13:55 | 06/01/22 09:07 | 0.5' |
| 890-2366-3 | SS06 | Solid | 05/31/22 14:00 | 06/01/22 09:07 | 0.5' |
| 890-2366-4 | SS07 | Solid | 05/31/22 14:05 | 06/01/22 09:07 | 0.5' |

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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: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | Ensolum LLC. | Company Name: | XTO Energy, Inc. |
| Address: | | Address: | 3104 E. Green Street |
| City, State ZIP: | | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 817.683.2503 | Email: | |

**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: | BEU 5E Han Solo 114H | Turn Around | |
| Project Number: | 03E1558021 | ☑ Routine ☒ Rush | |
| Project Location: | | Due Date: | 3 DAY TAT |
| 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: | TNM-007 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 2.6 |
| Total Containers: | | Corrected Temperature: | 2.4 |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | CHLORIDES (EPA: 300.0) | TPH (8015) | BTEX (8021) |
|---|---|---|---|---|---|---|---|---|---|---|
| SS04 | s | 05.31.22 | 1350 | 0.5' | G | 1 | | x | x | x |
| SS05 | s | 05.31.22 | 1355 | 0.5' | G | 1 | | x | x | x |
| SS06 | s | 05.31.22 | 1400 | 0.5' | G | 1 | | x | x | x |
| SS07 | s | 05.31.22 | 1405 | 0.5' | G | 1 | | x | x | x |

Parameters

890-2366 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**

Incident ID:NAPP2209041753

Cost Center:1606761001

AFE:

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag $SiO_2$ Na Sr 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 | Amanda Stuff | 10-1-22 9:0 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2366-1
SDG Number: 03E1558021

**Login Number: 2366**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2366-1
SDG Number: 03E1558021

**Login Number: 2366**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 06/02/22 11:42 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

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

Laboratory Job ID: 890-2594-1
Laboratory Sample Delivery Group: 03E1558021
Client Project/Site: BEU 5E HAN SOLO 114H

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*7/27/2022 9:33:22 AM*

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



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

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

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Laboratory Job ID: 890-2594-1
SDG: 03E1558021

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## 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 |
|---|---|
| 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: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## Job ID: 890-2594-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2594-1**

**Receipt**
The sample was received on 7/19/2022 3:58 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

**GC VOA**
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-30562 and analytical batch 880-30657 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

**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: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## Client Sample ID: FS04A

**Date Collected: 07/19/22 13:00**
**Date Received: 07/19/22 15:58**
**Sample Depth: 1**

## Lab Sample ID: 890-2594-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | U | 0.00198 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 13:24 | 1 |
| Toluene | <0.00198 | U | 0.00198 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 13:24 | 1 |
| Ethylbenzene | <0.00198 | U | 0.00198 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 13:24 | 1 |
| m-Xylene & p-Xylene | <0.00397 | U | 0.00397 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 13:24 | 1 |
| o-Xylene | <0.00198 | U | 0.00198 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 13:24 | 1 |
| Xylenes, Total | <0.00397 | U | 0.00397 | | mg/Kg | | 07/26/22 09:25 | 07/26/22 13:24 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *07/26/22 09:25* | *07/26/22 13:24* | *1* |
| *1,4-Difluorobenzene (Surr)* | *81* | | *70 - 130* | *07/26/22 09:25* | *07/26/22 13:24* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00397 | U | 0.00397 | | mg/Kg | | | 07/26/22 15:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 07/27/22 08:23 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 07/25/22 16:23 | 07/26/22 13:44 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 07/25/22 16:23 | 07/26/22 13:44 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 07/25/22 16:23 | 07/26/22 13:44 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *84* | | *70 - 130* | *07/25/22 16:23* | *07/26/22 13:44* | *1* |
| *o-Terphenyl* | *91* | | *70 - 130* | *07/25/22 16:23* | *07/26/22 13:44* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **91.7** | | 5.04 | | mg/Kg | | | 07/25/22 00:50 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## 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) | | | | | | | | | | |
| 880-17132-A-4-F MS | Matrix Spike | 103 | 95 | | | | | | | | | | |
| 880-17132-A-4-G MSD | Matrix Spike Duplicate | 110 | 96 | | | | | | | | | | |
| 890-2594-1 | FS04A | 99 | 81 | | | | | | | | | | |
| 890-2603-A-1-D MS | Matrix Spike | 103 | 85 | | | | | | | | | | |
| 890-2603-A-1-E MSD | Matrix Spike Duplicate | 107 | 92 | | | | | | | | | | |
| LCS 880-30562/1-A | Lab Control Sample | 106 | 94 | | | | | | | | | | |
| LCS 880-30664/1-A | Lab Control Sample | 105 | 95 | | | | | | | | | | |
| LCSD 880-30562/2-A | Lab Control Sample Dup | 104 | 94 | | | | | | | | | | |
| LCSD 880-30664/2-A | Lab Control Sample Dup | 108 | 98 | | | | | | | | | | |
| MB 880-30562/5-A | Method Blank | 90 | 84 | | | | | | | | | | |
| MB 880-30664/5-A | Method Blank | 100 | 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) | | | | | | | | | | |
| 880-17280-A-18-D MS | Matrix Spike | 88 | 94 | | | | | | | | | | |
| 880-17280-A-18-E MSD | Matrix Spike Duplicate | 85 | 92 | | | | | | | | | | |
| 890-2594-1 | FS04A | 84 | 91 | | | | | | | | | | |
| LCS 880-30622/2-A | Lab Control Sample | 102 | 114 | | | | | | | | | | |
| LCSD 880-30622/3-A | Lab Control Sample Dup | 91 | 104 | | | | | | | | | | |
| MB 880-30622/1-A | Method Blank | 98 | 110 | | | | | | | | | | |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

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

**Lab Sample ID: MB 880-30562/5-A**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 30562**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/25/22 10:57 | 07/26/22 22:37 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/25/22 10:57 | 07/26/22 22:37 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/25/22 10:57 | 07/26/22 22:37 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 07/25/22 10:57 | 07/26/22 22:37 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 07/25/22 10:57 | 07/26/22 22:37 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 07/25/22 10:57 | 07/26/22 22:37 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *70 - 130* | *07/25/22 10:57* | *07/26/22 22:37* | *1* |
| *1,4-Difluorobenzene (Surr)* | *84* | | *70 - 130* | *07/25/22 10:57* | *07/26/22 22:37* | *1* |

**Lab Sample ID: LCS 880-30562/1-A**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30562**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09490 | | mg/Kg | | 95 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09745 | | mg/Kg | | 97 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1000 | | mg/Kg | | 100 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2002 | | mg/Kg | | 100 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1107 | | mg/Kg | | 111 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* |

**Lab Sample ID: LCSD 880-30562/2-A**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30562**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1003 | | mg/Kg | | 100 | 70 - 130 | 6 | 35 |
| Toluene | | | 0.100 | 0.1020 | | mg/Kg | | 102 | 70 - 130 | 5 | 35 |
| Ethylbenzene | | | 0.100 | 0.1039 | | mg/Kg | | 104 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2077 | | mg/Kg | | 104 | 70 - 130 | 4 | 35 |
| o-Xylene | | | 0.100 | 0.1145 | | mg/Kg | | 114 | 70 - 130 | 3 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* |

**Lab Sample ID: 890-2603-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30562**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U F1 F2 | 0.101 | 0.03049 | F1 | mg/Kg | | 30 | 70 - 130 | | |
| Toluene | <0.00201 | U F1 F2 | 0.101 | 0.03834 | F1 | mg/Kg | | 37 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

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

**Lab Sample ID: 890-2603-A-1-D MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30562**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00201 | U F1 F2 | 0.101 | 0.01617 | F1 | mg/Kg | | 16 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U F1 F2 | 0.202 | 0.08284 | F1 | mg/Kg | | 40 | 70 - 130 |
| o-Xylene | <0.00201 | U F1 F2 | 0.101 | 0.04972 | F1 | mg/Kg | | 49 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *85* | | *70 - 130* |

**Lab Sample ID: 890-2603-A-1-E MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30562**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U F1 F2 | 0.100 | 0.07677 | F2 | mg/Kg | | 77 | 70 - 130 | 86 | 35 |
| Toluene | <0.00201 | U F1 F2 | 0.100 | 0.08242 | F2 | mg/Kg | | 81 | 70 - 130 | 73 | 35 |
| Ethylbenzene | <0.00201 | U F1 F2 | 0.100 | 0.08472 | F2 | mg/Kg | | 85 | 70 - 130 | 136 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U F1 F2 | 0.200 | 0.1719 | F2 | mg/Kg | | 85 | 70 - 130 | 70 | 35 |
| o-Xylene | <0.00201 | U F1 F2 | 0.100 | 0.09434 | F2 | mg/Kg | | 94 | 70 - 130 | 62 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *92* | | *70 - 130* |

**Lab Sample ID: MB 880-30664/5-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30664**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| Toluene | <0.00200 | U | 0.00200 | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | mg/Kg | | 07/26/22 09:25 | 07/26/22 12:01 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* | *07/26/22 09:25* | *07/26/22 12:01* | *1* |
| *1,4-Difluorobenzene (Surr)* | *87* | | *70 - 130* | *07/26/22 09:25* | *07/26/22 12:01* | *1* |

**Lab Sample ID: LCS 880-30664/1-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 30657** — **Prep Batch: 30664**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.09358 | | mg/Kg | | 94 | 70 - 130 |
| Toluene | 0.100 | 0.09382 | | mg/Kg | | 94 | 70 - 130 |
| Ethylbenzene | 0.100 | 0.09803 | | mg/Kg | | 98 | 70 - 130 |
| m-Xylene & p-Xylene | 0.200 | 0.1983 | | mg/Kg | | 99 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

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

**Lab Sample ID: LCS 880-30664/1-A**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30664**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | | | 0.100 | 0.1073 | | mg/Kg | | 107 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *95* | | *70 - 130* |

**Lab Sample ID: LCSD 880-30664/2-A**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30664**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09765 | | mg/Kg | | 98 | 70 - 130 | 4 | 35 |
| Toluene | | | 0.100 | 0.09676 | | mg/Kg | | 97 | 70 - 130 | 3 | 35 |
| Ethylbenzene | | | 0.100 | 0.1016 | | mg/Kg | | 102 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2052 | | mg/Kg | | 103 | 70 - 130 | 3 | 35 |
| o-Xylene | | | 0.100 | 0.1117 | | mg/Kg | | 112 | 70 - 130 | 4 | 35 |

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

**Lab Sample ID: 880-17132-A-4-F MS**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30664**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.100 | 0.08215 | | mg/Kg | | 82 | 70 - 130 | | |
| Toluene | <0.00201 | U | 0.100 | 0.07761 | | mg/Kg | | 77 | 70 - 130 | | |
| Ethylbenzene | <0.00201 | U | 0.100 | 0.07428 | | mg/Kg | | 74 | 70 - 130 | | |
| m-Xylene & p-Xylene | <0.00402 | U | 0.200 | 0.1476 | | mg/Kg | | 74 | 70 - 130 | | |
| o-Xylene | <0.00201 | U | 0.100 | 0.08083 | | mg/Kg | | 81 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *95* | | *70 - 130* |

**Lab Sample ID: 880-17132-A-4-G MSD**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 30664**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0998 | 0.08953 | | mg/Kg | | 90 | 70 - 130 | 9 | 35 |
| Toluene | <0.00201 | U | 0.0998 | 0.08606 | | mg/Kg | | 85 | 70 - 130 | 10 | 35 |
| Ethylbenzene | <0.00201 | U | 0.0998 | 0.08275 | | mg/Kg | | 83 | 70 - 130 | 11 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.200 | 0.1653 | | mg/Kg | | 83 | 70 - 130 | 11 | 35 |
| o-Xylene | <0.00201 | U | 0.0998 | 0.09102 | | mg/Kg | | 91 | 70 - 130 | 12 | 35 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

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

**Lab Sample ID: 880-17132-A-4-G MSD**
**Matrix: Solid**
**Analysis Batch: 30657**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 30664**

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 110 | | 70 - 130 |
| 1,4-Difluorobenzene (Surr) | 96 | | 70 - 130 |

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

**Lab Sample ID: MB 880-30622/1-A**
**Matrix: Solid**
**Analysis Batch: 30645**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 30622**

| 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 | | 07/25/22 16:23 | 07/26/22 09:44 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 07/25/22 16:23 | 07/26/22 09:44 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 07/25/22 16:23 | 07/26/22 09:44 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 98 | | 70 - 130 | 07/25/22 16:23 | 07/26/22 09:44 | 1 |
| o-Terphenyl | 110 | | 70 - 130 | 07/25/22 16:23 | 07/26/22 09:44 | 1 |

**Lab Sample ID: LCS 880-30622/2-A**
**Matrix: Solid**
**Analysis Batch: 30645**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 30622**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 957.4 | | mg/Kg | | 96 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 926.5 | | mg/Kg | | 93 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 102 | | 70 - 130 |
| o-Terphenyl | 114 | | 70 - 130 |

**Lab Sample ID: LCSD 880-30622/3-A**
**Matrix: Solid**
**Analysis Batch: 30645**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 30622**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 988.4 | | mg/Kg | | 99 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 863.8 | | mg/Kg | | 86 | 70 - 130 | 7 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 91 | | 70 - 130 |
| o-Terphenyl | 104 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

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

**Lab Sample ID: 880-17280-A-18-D MS**
**Matrix: Solid**
**Analysis Batch: 30645**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 30622**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 1000 | 1163 | | mg/Kg | | 116 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 1000 | 789.8 | | mg/Kg | | 79 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *88* | | *70 - 130* |
| *o-Terphenyl* | *94* | | *70 - 130* |

**Lab Sample ID: 880-17280-A-18-E MSD**
**Matrix: Solid**
**Analysis Batch: 30645**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 30622**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 999 | 1054 | | mg/Kg | | 106 | 70 - 130 | 10 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 999 | 773.5 | | mg/Kg | | 77 | 70 - 130 | 2 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* |
| *o-Terphenyl* | *92* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-30245/1-A**
**Matrix: Solid**
**Analysis Batch: 30486**

**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 | | | 07/24/22 23:00 | 1 |

**Lab Sample ID: LCS 880-30245/2-A**
**Matrix: Solid**
**Analysis Batch: 30486**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 264.1 | | mg/Kg | | 106 | 90 - 110 |

**Lab Sample ID: LCSD 880-30245/3-A**
**Matrix: Solid**
**Analysis Batch: 30486**

**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 | 265.5 | | mg/Kg | | 106 | 90 - 110 | 1 | 20 |

# QC Sample Results

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 880-17194-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 30486**

**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 | 948 | | 250 | 1174 | | mg/Kg | | 91 | 90 - 110 |

**Lab Sample ID: 880-17194-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 30486**

**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 | 948 | | 250 | 1184 | | mg/Kg | | 94 | 90 - 110 | 1 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## GC VOA

### Prep Batch: 30562

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-30562/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-30562/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-30562/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2603-A-1-D MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-2603-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 30657

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Total/NA | Solid | 8021B | 30664 |
| MB 880-30562/5-A | Method Blank | Total/NA | Solid | 8021B | 30562 |
| MB 880-30664/5-A | Method Blank | Total/NA | Solid | 8021B | 30664 |
| LCS 880-30562/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 30562 |
| LCS 880-30664/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 30664 |
| LCSD 880-30562/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 30562 |
| LCSD 880-30664/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 30664 |
| 880-17132-A-4-F MS | Matrix Spike | Total/NA | Solid | 8021B | 30664 |
| 880-17132-A-4-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 30664 |
| 890-2603-A-1-D MS | Matrix Spike | Total/NA | Solid | 8021B | 30562 |
| 890-2603-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 30562 |

### Prep Batch: 30664

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Total/NA | Solid | 5035 | |
| MB 880-30664/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-30664/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-30664/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-17132-A-4-F MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-17132-A-4-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 30716

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 30622

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Total/NA | Solid | 8015NM Prep | |
| MB 880-30622/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-30622/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-30622/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-17280-A-18-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-17280-A-18-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 30645

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Total/NA | Solid | 8015B NM | 30622 |
| MB 880-30622/1-A | Method Blank | Total/NA | Solid | 8015B NM | 30622 |
| LCS 880-30622/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 30622 |
| LCSD 880-30622/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 30622 |
| 880-17280-A-18-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 30622 |

# QC Association Summary

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## GC Semi VOA (Continued)

### Analysis Batch: 30645 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-17280-A-18-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 30622 |

### Analysis Batch: 30753

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 30245

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Soluble | Solid | DI Leach | |
| MB 880-30245/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-30245/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-30245/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-17194-A-1-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-17194-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 30486

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Soluble | Solid | 300.0 | 30245 |
| MB 880-30245/1-A | Method Blank | Soluble | Solid | 300.0 | 30245 |
| LCS 880-30245/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 30245 |
| LCSD 880-30245/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 30245 |
| 880-17194-A-1-B MS | Matrix Spike | Soluble | Solid | 300.0 | 30245 |
| 880-17194-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 30245 |

# Lab Chronicle

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## Client Sample ID: FS04A

**Date Collected: 07/19/22 13:00**
**Date Received: 07/19/22 15:58**

## Lab Sample ID: 890-2594-1

**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 | | | 5.04 g | 5 mL | 30664 | 07/26/22 09:25 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 30657 | 07/26/22 13:24 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 30716 | 07/26/22 15:53 | SM | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 30753 | 07/27/22 08:23 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 30622 | 07/25/22 16:23 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | | | 30645 | 07/26/22 13:44 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 4.96 g | 50 mL | 30245 | 07/22/22 12:23 | SMC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | | | 30486 | 07/25/22 00:50 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

## 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: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

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

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

# Sample Summary

Client: Ensolum
Project/Site: BEU 5E HAN SOLO 114H

Job ID: 890-2594-1
SDG: 03E1558021

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2594-1 | FS04A | Solid | 07/19/22 13:00 | 07/19/22 15:58 | 1 |

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: | Kalei Jennings | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum, LLC | Company Name: | XTO Energy, Inc. |
| Address: | 3122 National parks Hwy | Address: | 3104 E. Green Street |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 8176832503 | 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: | BEU 5E HAN SOLO 114H | Turn Around | ☑ Routine ☐ Rush |
| Project Number: | 03E1558021 | Due Date: | |
| Project Location: | EDDY COUNTY, NM | TAT starts the day received by the lab, if received by 4:30pm | |
| Sampler's Name: | Conner Shore | | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | TA-W-20 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 3.5 |
| Total Containers: | | Corrected Temperature: | 3.3 |

**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 | CHLORIDES (EPA: 300.0) | TPH (8015) | BTEX (8021) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| CS ~~F801A~~ K504A | S | 7/19/2022 | 1300 | 1' | COMP | 1 | X | X | X | Cost Center: 1606761001 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | Incident ID:NAPP2209041753 |
| | | | | | | | | | | |
| | | | | | | | | | | |

890-2594 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

**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 Stuf | 7/19/22 1558 | 4 | | |
| 3 | | | 6 | | |
| 5 | | | | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2594-1
SDG Number: 03E1558021

**Login Number: 2594**
**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. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2594-1
SDG Number: 03E1558021

**Login Number: 2594**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 07/21/22 10:51 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 | |

ENSOLUM

# APPENDIX E

## NMOCD Notifications

**From:** Hamlet, Robert, EMNRD
**To:** Collins, Melanie
**Cc:** DelawareSpills /SM; Aimee Cole; Kalei Jennings; Tacoma Morrissey; Ben Belill; Pennington, Shelby G; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
**Subject:** (Extension Approval) XTO - BEU 5E Han Solo 114H (Incident Number NAPP2209041753)
**Date:** Friday, June 10, 2022 3:26:24 PM
**Attachments:** image002.jpg
image003.png

---

[ **EXTERNAL EMAIL**]

RE: Incident #**NAPP2209041753**

**Melanie**,

Your request for an extension to **August 14th, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

**Robert Hamlet** ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

---

**From:** Collins, Melanie <melanie.collins@exxonmobil.com>
**Sent:** Friday, June 10, 2022 12:48 PM
**To:** Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
**Cc:** DelawareSpills /SM <DelawareSpills@exxonmobil.com>; acole@ensolum.com; Kalei Jennings <kjennings@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>; bbelill@ensolum.com; Pennington, Shelby G <shelby.g.pennington@exxonmobil.com>
**Subject:** [EXTERNAL] XTO- Extension Request- BEU 5E Han Solo 114H (Incident Number NAPP2209041753)



All,

**BEU 5E Han Solo 114H (Incident Number NAPP2209041753)**

XTO is requesting an extension for the current deadline of June 15, 2022 for submitting a closure request required in 19.15.29.12.B.(1) NMAC at the BEU 5E Han Solo 114H (Incident Number NAPP2209041753). The release occurred on March 17, 2022 and initial assessment and excavation of the release has been completed. Based on laboratory analytical results received this week, XTO is requesting a 60-day extension to complete additional excavation of the impacted soil. In order to complete the excavation activities and submit a closure request, XTO requests an extension until August 14, 2022.

Please do not hesitate to reach out should you have any questions or require further information regarding this extension request.

Thank you,

*Melanie Collins*
SSHE Technician
An **ExxonMobil** Subsidiary
6401 Holiday Hill Rd, Bldg 5
Midland, TX 79707
432-218-3709

**From:** Aimee Cole
**To:** Tacoma Morrissey; Kalei Jennings; Ben Belill
**Subject:** FW: XTO - Sampling Notification (week of 5/30/22 - 6/3/22)
**Date:** Wednesday, May 25, 2022 4:40:13 PM
**Attachments:** image001.png
image002.png
image003.png
image004.png

---

Submittal below for your records/attachment for reporting.
Thanks!

**Aimee Cole**
Senior Managing Scientist
720-384-7365
**Ensolum, LLC**

---

**From:** Baker, Adrian <adrian.baker@exxonmobil.com>
**Sent:** Wednesday, May 25, 2022 2:17 PM
**To:** ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>
**Cc:** DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Aimee Cole <acole@ensolum.com>
**Subject:** XTO - Sampling Notification (week of 5/30/22 - 6/3/22)

[ **EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of May 30, 2022.

Tuesday, May 31st

- PLU 223 / nAPP2204945328, nAPP2205343597, NAPP2201745910
- BEU 5E Han Solo 114H / nAPP2209041753

Wednesday, June 1st

- PLU 223 / nAPP2204945328, nAPP2205343597, NAPP2201745910
- BEU 5E Han Solo 114H / nAPP2209041753

Thursday, June 2nd

- PLU 223 / nAPP2204945328, nAPP2205343597, NAPP2201745910
- Row 4 Muy Wayno Line / nAPP2209039217
- Pierce Canyon 3 SWD/ nAPP2209446613

Friday, June 3rd

- PLU 223 / nAPP2204945328, nAPP2205343597, NAPP2201745910
- Row 4 Muy Wayno Line / nAPP2209039217

Thank you,

**Adrian Baker**
Environmental Coordinator
Permian Business Unit

XTO Energy Inc.
6401 N. Holiday Hill Dr.
Midland, Tx 79707
Mobile:(432)-236-3808
adrian.baker@exxonmobil.com

**From:** Tacoma Morrissey
**To:** Ben Belill; Kalei Jennings
**Subject:** FW: XTO - Sampling Notification (week of 7/18/22 - 7/22/22)
**Date:** Monday, July 18, 2022 8:59:15 AM
**Attachments:** image001.png
image002.png
image003.png
image004.png

---

See below.

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

---

**From:** Green, Garrett J <garrett.green@exxonmobil.com>
**Sent:** Friday, July 15, 2022 2:22 PM
**To:** ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
**Cc:** Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM <DelawareSpills@exxonmobil.com>
**Subject:** XTO - Sampling Notification (week of 7/18/22 - 7/22/22)

[ **EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of July 18, 2022.

Tuesday
- BEU 5E Han Solo 114H/ nAPP2209041753
- BEU 5E Han Solo 105H/ nAPP2209731445

Wednesday
- BEU 5E Han Solo 114H/ nAPP2209041753
- BEU 5E Han Solo 105H/ nAPP2209731445

Thursday
- PLU 18 TWR 155H/ nAPP2214735696
- JRU DI 1 Liner Delineation/ nAPP2216152113

Friday
- PLU 18 TWR 155H/ nAPP2214735696

Thank you,

**Garrett Green**
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

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

ENSOLUM

# APPENDIX F

## Safety Data Sheet for Friction Reducer

PFP INDUSTRIES

# SAFETY DATA SHEET

**Issuing Date** 01-Aug-2019 **Revision Date** 01-Aug-2019 **Revision Number** 1

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

**Product identifier**

**Product Name** POLYglide Xcel-200

**Other means of identification**

**Product Code(s)** 10497

**Synonyms** None

**Recommended use of the chemical and restrictions on use**

**Recommended Use** No information available

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Supplier Address**
PfP Industries
29738 Goynes Rd.
Katy, TX 77493

**Manufacturer Address**
PfP Industries
29738 Goynes Rd.
Katy, TX 77493

**Emergency telephone number**

**Company Phone Number** 281-371-2000

**Emergency Telephone** Chemtrec 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Classification**

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

| | |
|---|---|
| Flammable liquids | Category 4 |

**Hazards not otherwise classified (HNOC)**
Not applicable

**Label elements**

**Warning**

Combustible liquid

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

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

**Precautionary Statements - Response**

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

**Precautionary Statements - Storage**
Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**
Dispose of contents/container to an approved waste disposal plant

**Other Information**
May be harmful in contact with skin
Harmful to aquatic life

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

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

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

## 4. FIRST AID MEASURES

**Description of first aid measures**

**Inhalation** Remove to fresh air.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

**Ingestion** Clean mouth with water and drink afterwards plenty of water.

**Self-protection of the first aider** Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

**Most important symptoms and effects, both acute and delayed**

**Symptoms** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media** Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

**Unsuitable extinguishing media** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical** Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray.

**Explosion data**
**Sensitivity to Mechanical Impact** None.
**Sensitivity to Static Discharge** None.

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

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

**Environmental precautions**

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

**Methods and material for containment and cleaning up**

**Methods for containment** Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up** Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

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

**Conditions for safe storage, including any incompatibilities**

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

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

**Appropriate engineering controls**

**Engineering controls** Showers
Eyewash stations
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Tight sealing safety goggles.

**Skin and body protection** No special protective equipment required.

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

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

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

| Property | Values | Remarks • Method |
|---|---|---|
| **pH** | No data available | None known |
| **Melting point / freezing point** | No data available | None known |
| **Boiling point / boiling range** | No data available | None known |
| **Flash point** | >= 67 °C / 153 °F | |
| **Evaporation rate** | No data available | None known |
| **Flammability (solid, gas)** | No data available | None known |
| **Flammability Limit in Air** | | None known |
| **Upper flammability limit:** | No data available | |
| **Lower flammability limit:** | No data available | |
| **Vapor pressure** | No data available | None known |
| **Vapor density** | No data available | None known |
| **Relative density** | 0.97 - 1.03 | |
| **Water solubility** | Miscible in water | |
| **Solubility in other solvents** | No data available | None known |
| **Partition coefficient** | No data available | None known |
| **Autoignition temperature** | No data available | None known |
| **Decomposition temperature** | No data available | None known |
| **Kinematic viscosity** | ≥150 mm²/s | |
| **Dynamic viscosity** | No data available | None known |
| **Explosive properties** | No information available | |
| **Oxidizing properties** | No information available | |

**Other Information**

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

## 10. STABILITY AND REACTIVITY

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

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

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

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** No information available.

**Numerical measures of toxicity**

**Acute toxicity**

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

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

**Component Information**

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

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

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

**Serious eye damage/eye irritation** No information available.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

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

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

**Other adverse effects** No information available.

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## 14. TRANSPORT INFORMATION

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

## 15. REGULATORY INFORMATION

**International Inventories**

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

| | |
|---|---|
| **PICCS** | Complies |
| **AICS** | Complies |

**Legend:**
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
**ENCS** - Japan Existing and New Chemical Substances
**IECSC** - China Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**AICS** - Australian Inventory of Chemical Substances

**US Federal Regulations**

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

**SARA 311/312 Hazard Categories**

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

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

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

**US State Regulations**

**California Proposition 65**
This product does not contain any Proposition 65 chemicals.

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

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

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **NFPA** | **Health hazards** 2 | **Flammability** 2 | **Instability** 0 | **Physical and chemical properties** - |
| **HMIS** | **Health hazards** 2 | **Flammability** 2 | **Physical hazards** 0 | **Personal protection** X |

**Issuing Date** 01-Aug-2019

**Revision Date** 01-Aug-2019

**Revision Note** No information available.

**Disclaimer**

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**End of Safety Data Sheet**

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

CONDITIONS

Action 133568

## CONDITIONS

| | |
|---|---|
| Operator:<br>XTO ENERGY, INC<br>6401 Holiday Hill Road<br>Midland, TX 79707 | OGRID:<br>5380 |
| | Action Number:<br>133568 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jnobui | Closure Report Approved. | 9/29/2022 |