Form C-141
Page 5

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | nAPP2226346738 |
| District RP | |
| Facility ID | |
| Application ID | |

# Remediation Plan

**Remediation Plan Checklist**: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only**: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: __ Garrett Green_____ Title: _SSHE Coordinator_____

Signature: ____ _____ Date: __12/13/2022_____

email: __garrett.green@exxonmobil.com_____ Telephone: ___575-200-0729

**OCD Only**

Received by: Jocelyn Harimon Date: 12/14/2022

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

Signature: Robert Hamlet Date: 4/26/2023

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 | NAPP2226346738 |
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# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party XTO Energy | OGRID 5380 |
| Contact Name Garrett Green | Contact Telephone 575-200-0729 |
| Contact email garrett.green@exxonmobil.com | Incident # *(assigned by OCD)* |
| Contact mailing address 3104 E. Greene Street, Carlsbad, New Mexico, 88220 | |

## Location of Release Source

Latitude 32.27708 Longitude -103.94295

*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name Remuda 100 CTB | Site Type Central Tank Battery |
| Date Release Discovered 09/14/2022 | API# *(if applicable)* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| E | 25 | 23S | 29E | 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) 5.07 | Volume Recovered (bbls) 4.00 |
| | 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) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release: Corrosion on a 6" T caused fluids to release from the main discharge water line. A vacuum truck recovered all free fluids. A third-party contractor has been retained for remediation purposes.

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State of New Mexico
Oil Conservation Division

| | |
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| | |
|---|---|
| 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: Garrett Green
Title: SSHE Coordinator

Signature: 
Date: 9/20/2022

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

**OCD Only**

Received by: Jocelyn Harimon
Date: 09/20/2022

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2226346738 |
| 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? | >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.

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2226346738 |
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Printed Name: _ Garrett Green_____ Title: _SSHE Coordinator_____

Signature: _  _____ Date: __12/13/2022_____

email: __garrett.green@exxonmobil.com_____ Telephone: ___575-200-0729_____

**OCD Only**

Received by: _____Jocelyn Harimon_____ Date: __12/14/2022____

| | |
|---|---|
| Incident ID | nAPP2226346738 |
| District RP | |
| Facility ID | |
| Application ID | |

# Remediation Plan

**Remediation Plan Checklist**: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only**: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

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☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: __ Garrett Green_____ Title: _SSHE Coordinator_____

Signature: ____ _____ Date: __12/13/2022_____

email: __garrett.green@exxonmobil.com_____ Telephone: ___575-200-0729

**OCD Only**

Received by: Jocelyn Harimon Date: 12/14/2022

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

Signature: _____ Date: _____

ENSOLUM

December 13, 2022

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

**Re: Deferral Request**
**Remuda 100 CTB**
**Incident Number NAPP2226346738**
**Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this *Deferral Request* to document site assessment, delineation, and soil sampling activities at the Remuda 100 Central Tank Battery (CTB; Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following release of produced water. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this *Deferral Request*, describing site assessment and delineation activities that have occurred and requesting deferral of final remediation for Incident Number NAPP2226346738 until the Site is reconstructed, and/or the well pad is abandoned.

## SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in in Unit E, Section 25, Township 23 South, Range 29 East, in Eddy County, New Mexico (32.27708°N, 103.94295°W) and is associated with oil and gas exploration and production operations on New Mexico State Land.

On September 14, 2022, corrosion along the main discharge produced water pipeline resulted in the release of approximately 5.07 barrels (bbls) of produced water onto the surface of the well pad, around active surface pipelines and production equipment. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; 4.0 bbls of produced water were recovered. XTO submitted a Release Notification Form C-141 (Form C-141) on September 20, 2022. The release was assigned Incident Number NAPP2226346738.

## SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on a recent soil boring drilled for determination of regional groundwater depth. Between November 18, 2020, and Janruary 5, 2021, a soil boring (C-04494) was drilled a ½-mile to the southeast

of the Site to a depth of 105 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activites. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 105 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. The Well Record and Log is included in Appendix A.

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 (medium potential karst designation area).

## WATERCOURSE SURVEY

The closest surface water or significant watercourse to the Site is a seasonal dry wash, located approximately 197 feet north of the Site. Because the significant watercourse appeared in online databases to flow through the well pad and adjacent well pad (Figure 2), Ensolum personnel conducted a field investigation to confirm the presence or absence of a potential significant watercourse. Field verification is sometimes necessary to measure the distance of the feature from the release extent and to confirm the feature complies with the definition of a significant watercourse per Subsection P of 19.15.17.7 NMAC. Specifically, the definition in Subsection P of 19.15.17.7 NMAC requires a defined bed and bank and either named or identified by a dashed blue line on United States Geological Survey (USGS) 7.5-minute quadrangle map or the next lower order tributary with a defined bed and bank of such watercourse.

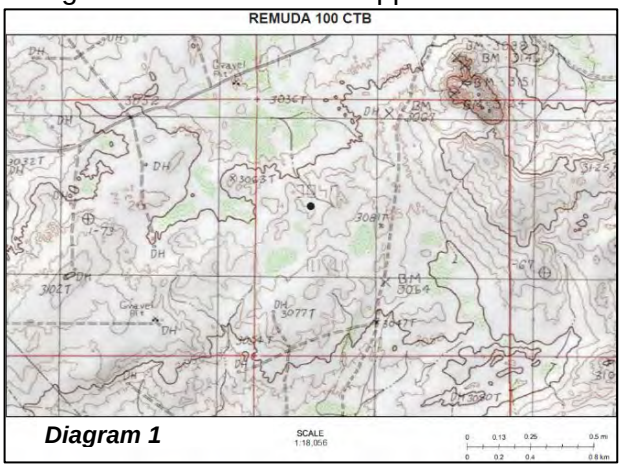
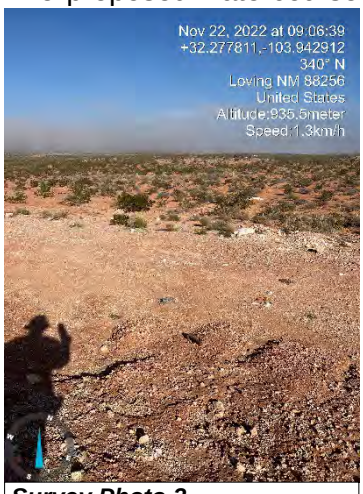


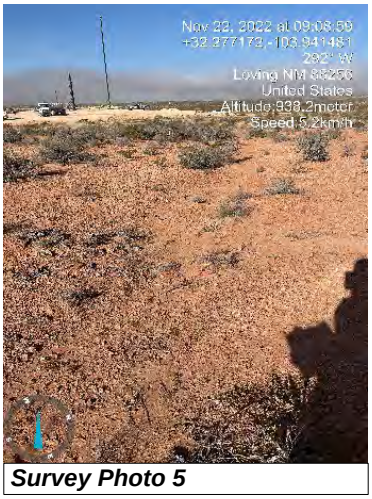
***Diagram 1***

The feature is not identified by a dashed blue line on the current USGS 7.5-minute quadrangle map. The proposed watercourse is identified as a dashed black line (Diagram 1). Additionally, the surface feature does not appear to reveal aerial properties of a next lower tributary that would connect to a significant watercourse, instead, connecting with another feature and apparently ending.



***Survey Photo 3***

No feature with a defined bed or bank was observed within 300 feet of the release during ground truthing, which included a pedestrian survey of the area north (Survey Photo 3, facing northwest) and east of the Site (Survey Photo 5, facing west). Only faint erosional paths without defined banks aligned with the topographic gradient were visible.



***Survey Photo 5***

Ensolum was able to identify a seasonal dry wash with a bed and bank located 375 feet north of the Site. Five photos (Photo 1 and Photo 6 through Photo 9) indicate a seasonal dry wash with evidence of fluvial deposition within the erosional feature. This feature is intersected by an access road and a pipeline ROW further to the north. More detailed results and photographic evidence are provided in Figure 2.

Based on the observations presented, there are no significant watercourses located within 300 feet of the Site location per the definition of a significant watercourse in Subsection P of 19.15.17.7 NMAC. Instead, only faint erosional channels formed by drainage of water during storm events. The faint conduits are intercepted by well pads. A potential significant watercourse was identified approximately 375 feet north of the site; however, this feature is also intersected by infrastructure that would affect water flow (an access road and a pipeline ROW) and does not connect to a larger watercourse.

Based on the results of the Site Characterization, absence of a significant watercourse on the pad, and confirmation of a significant watercourse greater than 300 feet away from the release, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

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

## SITE ASSESSMENT ACTIVITIES

On November 15, 2022, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Two delineation soil samples (SS01 and SS02) were collected within the release extent from a depth of approximately 0.5 feet bgs. The delineation 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 delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 3. 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 procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following constituents of concern (COC): 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.

Ensolum returned to the Site following utility locate clearance to advance two boreholes (BH01 and BH02) in the vicinity of delineation soil samples SS01 and SS02 by use of hand auger to assess the vertical extent of the release. Two discrete delineation soil samples were collected from each borehole at depths of 1-foot bgs and 2 feet bgs. Additionaly, Ensolum personnel collected four delineation soil samples (SS03 through SS06) at a depth of 0.5 feet bgs to assess the lateral extent of the release. The

delineation soil samples were field screened, handled, and submitted for analysis for the same COCs as described above. Field screening results and observations for the delineation soil samples were logged on lithologic soil sampling logs, which are included in Appendix C.

Laboratory analytical results for delineation soil samples BH01/BH01A, BH02//BH02A, and SS03 through SS06 indicated COC concentrations were in compliance with the Site Closure Criteria. Delineation soil samples SS01 and SS02 contained TPH-GRO/TPH-DRO, and TPH concentrations exceeding the Closure Criteria. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included in Appendix D.

## MICRO-BLAZE APPLICATION ACTIVITIES

XTO safety policy includes a restriction of soil disturbing activities within a 2-foot radius of any active pipelines or production equipment. Because the soil could not be safely accessed for removal, 200 gallons of a 3 percent (%) solution of freshwater and Micro-Blaze®, which contains a combination of wetting agents, nutrients, and microbes, was applied to the impacted soil to address elevated TPH concentrations. A safety data sheet is included in Appendix F. The solution was applied over the entire release extent to oversaturate soil and promote infiltration into the subsurface.

## DEFFERAL REQUEST

XTO is requesting deferral of final remediation due to the presence of active pipelines above the entire release extent. Excavation of the soil would require a major facility deconstruction. The impacted soil remaining in place is delineated vertically to 1-foot bgs by delineation soil samples BH01 and BH02 and delineated laterally by delineation soil samples SS03 through SS06. Assuming a 1-foot depth based on the delineation soil sample results listed above and a 1,200-square foot area of the release extent, a total of approximately 45 cubic yards of TPH-impacted soil remains in place

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was determined to be greater than 100 feet bgs, and the impacted soil remaining in place is limited in areal and vertical extent. The surface of the release area was treated with Micro-Blaze® to reduce the observed TPH concentrations and potentially limit any additional migration.

Based on the presence of active pipelines within the release area and the complete lateral and vertical delineation of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Number NAPP2226346738 until final reclamation of the well pad or major construction, whichever comes first.

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

Sincerely,
**Ensolum, LLC**

Anita Thapalia, Ph.D., P.G.
Project Geologist

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

cc: Garrett Green, XTO
Shelby Pennington, XTO
New Mexico State Land Office

Appendices:

| | |
|---|---|
| Figure 1 | Site Receptor Map |
| Figure 2 | Watercourse Survey Map |
| Figure 3 | Delineation 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 Sample Notification |
| Appendix F | Micro-Blaze Safety Data Sheet |

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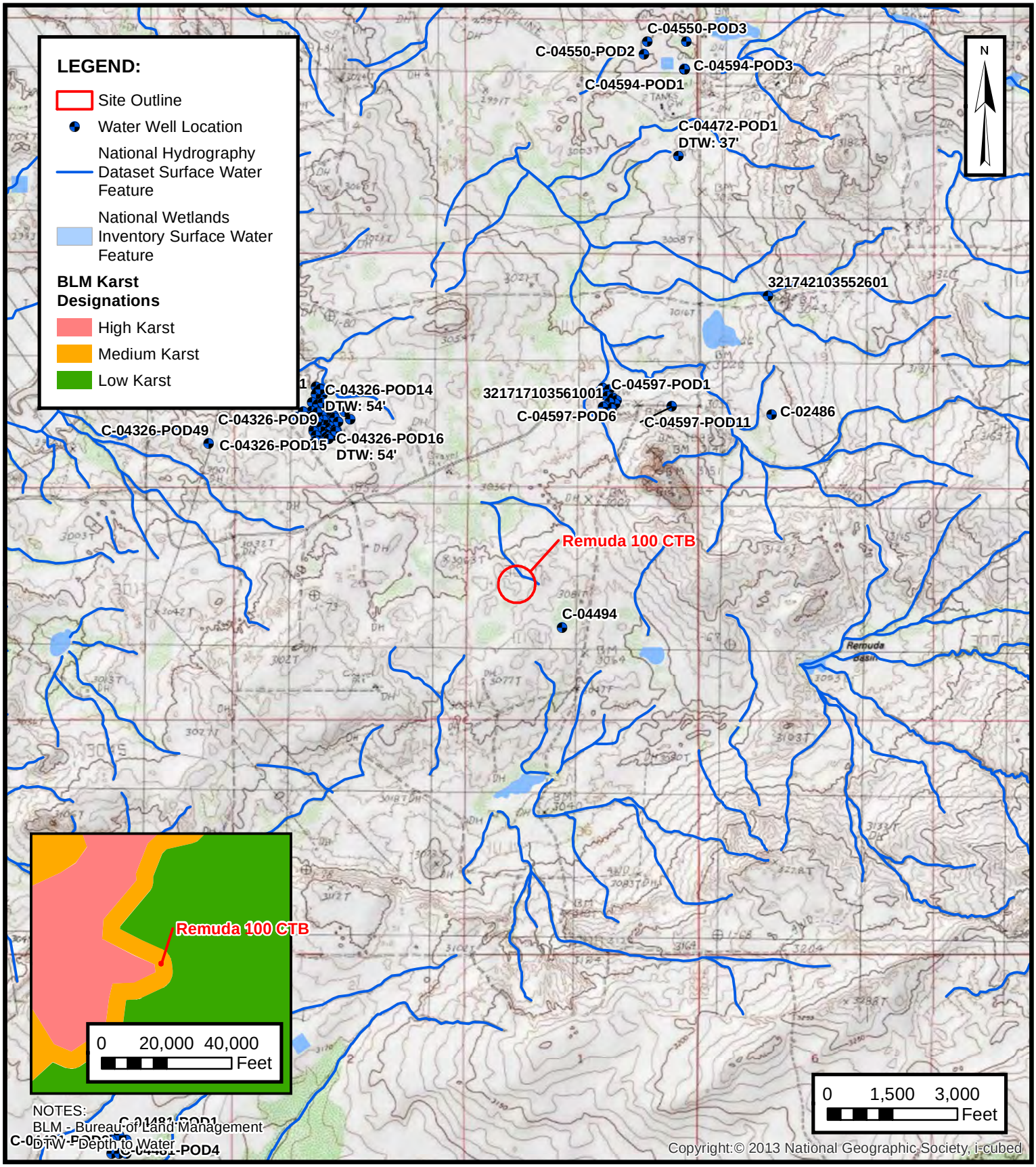
# FIGURES

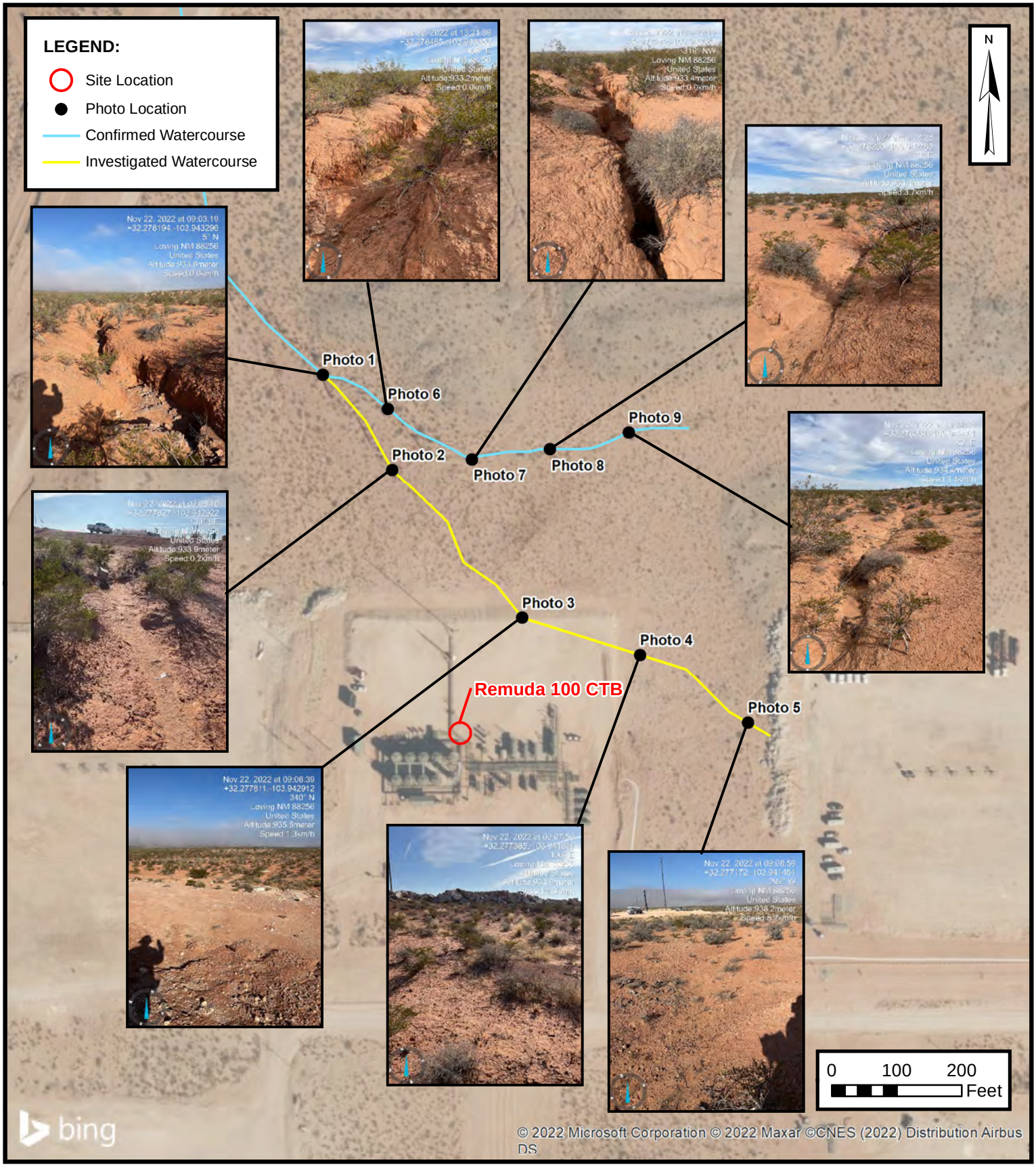



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

**SITE RECEPTOR MAP**

XTO ENERGY, INC
REMUDA 100 CTB
NAPP2226346738
Unit E, Sec 25, T23S, R29E
Eddy County, New Mexico

**FIGURE**
**1**

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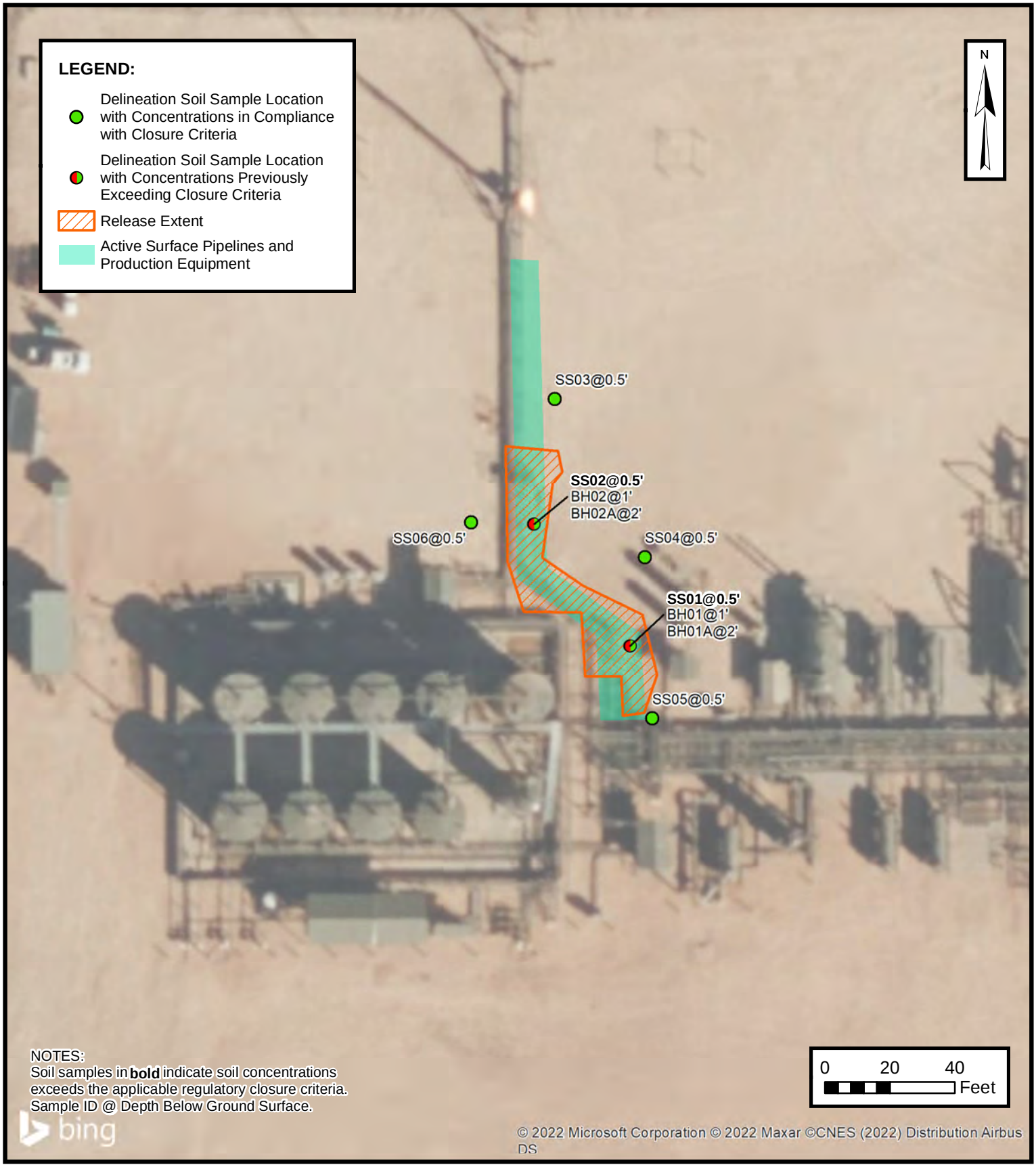
**WATERCOURSE SURVEY**

XTO ENERGY, INC
REMUDA 100 CTB
NAPP2226346738
Unit E, Sec 25, T23S, R29E
Eddy County, New Mexico

**FIGURE**
**2**




ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

**DELINEATION SOIL SAMPLE LOCATIONS**

XTO ENERGY, INC
REMUDA 100 CTB
NAPP2226346738
Unit E, Sec 25, T23S, R29E
Eddy County, New Mexico

**FIGURE**

**3**

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# TABLES

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# TABLE 1
## SOIL SAMPLE ANALYTICAL RESULTS
## Remuda 100 CTB
## 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 | 20,000 |
| Delineation Soil Samples | | | | | | | | | | |
| SS01 | 11/15/2022 | 0.5 | <0.00198 | <0.00396 | <49.8 | 2,350 | 390 | **2,350** | **2,740** | 5,600 |
| BH01 | 11/22/2022 | 1 | <0.00199 | <0.00398 | <50.0 | 60.0 | <50.0 | 60.0 | 60.0 | 2,420 |
| BH01A | 11/22/2022 | 2 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 1,980 |
| SS02 | 11/15/2022 | 0.5 | <0.00199 | <0.00398 | <50.0 | 2,400 | 418 | **2,400** | **2,820** | 13,000 |
| BH02 | 11/22/2022 | 1 | <0.00199 | <0.00398 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 6,150 |
| BH02A | 11/22/2022 | 2 | <0.00201 | <0.00402 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 1,570 |
| SS03 | 12/02/2022 | 0.5 | <0.00202 | <0.00403 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 11.5 |
| SS04 | 11/22/2022 | 0.5 | <0.00200 | <0.00401 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 23.7 |
| SS05 | 12/02/2022 | 0.5 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 21.6 |
| SS06 | 12/02/2022 | 0.5 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 22.0 |

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 requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

ENSOLUM

# APPENDIX A

## Referenced Well Records

WSP USA
508 West Stevens Street
Carlsbad, New Mexico 88220

| | |
|---|---|
| BH or PH Name: BH01 (C-04494) | Date: 11/18/2020, 12/02/20, 01/05/2021 |
| Site Name: Remuda North 25 Observation Well | |
| RP or Incident Numbe | |
| LTE Job Number: TE012919039 | |
| Logged By BB, LAD, FS | Method: Hollow Stem Auger, sonic |
| Lat/Long: | Field Screening: |
| Hole Diameter: 6.25", 4.25" | Total Depth: 105' |

## LITHOLOGIC / SOIL SAMPLING LOG

Comments:
Lithology remarks only. No field screenings: Dry hole

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | | | N | | | 1 | SP-SC | |
| | | | | | | 2 | | 0-1' : SAND, dry, brown, poorly graded, fine grain, Clay (10% clay), some roots, no stain, no odor |
| | | | | | | 3 | | |
| | | | | | | 4 | | 1-4' : SAND, dry, reddish-light brown, poorly graded, very fine - fine grain, some rounded caliche pebbles, no stain, no odor |
| D | | | N | | | 5 | CCHE | |
| | | | | | | 6 | | 4-9' : CALICHE, dry, light brown-tan, poorly consolidated, sub-rounded caliche pebbles and gravel, very silty, gradational |
| | | | | | | 7 | | |
| | | | | | | 8 | | 9-14' : Abundent sub-round caliche gravel |
| | | | | | | 9 | | 14-19' : Some sub-angular caliche gravel and pebbles |
| | | | | | | 10 | | 19-24' : Abundant sub-angular caliche gravel and pebbles, moderately consolidated |
| | | | | | | 11 | | |
| | | | | | | 12 | | |
| | | | | | | 13 | | |
| | | | | | | 14 | | |
| | | | | | | 15 | | |
| | | | | | | 16 | | |
| | | | | | | 17 | | |
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| | | | | | | 19 | | |
| | | | | | | 20 | | |
| | | | | | | 21 | | |
| | | | | | | 22 | | |
| | | | | | | 23 | | |
| | | | | | | 24 | | |
| D | | | N | | | 25 | CL | |

WSP USA
508 West Stevens Street
Carlsbad, New Mexico 88220

| | |
|---|---|
| BH or PH Name: BH01 (C-04494) | Date: 11/18/2020, 12/02/20, 01/05/2021 |
| Site Name: Remuda North 25 Observation Well | |
| RP or Incident Numbe | |
| LTE Job Number: TE012919039 | |
| Logged By BB, LAD, FS | Method: Hollow Stem Auger, sonic |
| Hole Diameter: 6.25", 4.25" | Total Depth: 105' |

**LITHOLOGIC / SOIL SAMPLING LOG**

Lat/Long:

Field Screening:

Comments:
Lithology remarks only. No field screenings: Dry hole

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | | | N | | | 26 | CL | 24-39' : MUDSTONE, dry, reddish-brown, low plasticity, well consolidated, cohesive, trace caliche sub-angular pebbles, no tain, no odor, sharp transition |
| | | | | | | 27 | | |
| | | | | | | 28 | | |
| | | | | | | 29 | | 34-39' : Sub-angular calcium carbonate gravel with dissolution features (1-3mm), tan-light brown |
| | | | | | | 30 | | At 39' : Begin air rotory (4.25") |
| | | | | | | 31 | | 39-42' : DOLOMETIC LIMESTONE, tan-light brown, dry, well consolidated, with dissolution features (1-3mm), sharp, no stain, no odor, light to moderate reaction with HCl |
| | | | | | | 32 | | |
| | | | | | | 33 | | 42-45' : Some light gray dolomite with trace dissolution features (>1mm) |
| | | | | | | 34 | | At 48' : Stop due to air rotory refusal (11/18/20) |
| | | | | | | 35 | | 48-56' : Advance borehole with new air rotary bit (12/02/20), DOLOMITE, white, well consolidated, dark gray-black banding, no stain , no odor |
| | | | | | | 36 | | |
| | | | | | | 37 | | |
| | | | | | | 38 | | |
| | | | | | | 39 | | |
| D | | | N | | | 40 | DOL | |
| | | | | | | 41 | | |
| | | | | | | 42 | | |
| | | | | | | 43 | | |
| | | | | | | 44 | | |
| | | | | | | 45 | | |
| | | | | | | 46 | | |
| | | | | | | 47 | | |
| | | | | | | 48 | | Refusal on 11/18/20 |
| | | | | | | 49 | | Restart borehole on 12/02/20 |
| | | | | | | 50 | | |

WSP USA
508 West Stevens Street
Carlsbad, New Mexico 88220

| | |
|---|---|
| BH or PH Name: BH01 (C-04494) | Date: 11/18/2020. 12/02/2020, 1/5/2021 |
| Site Name: Remuda North 25 Observation Well | |
| RP or Incident Number: | |
| LTE Job Number: TE012919039 | |

**LITHOLOGIC / SOIL SAMPLING LOG**

| | | | |
|---|---|---|---|
| | | Logged By BB, LAD, FS | Method: Hollow Stem Auger, sonic |
| Lat/Long: | Field Screening: | Hole Diameter: 6.25", 4.25" | Total Depth: 105' |

Comments:
Lithologic log only, no field screenings

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 51 | DOL | 48-56' : Advanced borehole with new air rotary bit (12/02/20), DOLOMITE, white, well consolidated, dark gray- banding, no stain no odor |
| | | | | | | 52 | | |
| | | | | | | 53 | | |
| | | | | | | 54 | | |
| | | | | | | 55 | | |
| | | | | | | 56 | | At 56' : Restarted borehole on 1/5/2021 with sonic rig |
| | | | | | | 57 | | 56-65' : DOLOMITE, dry, light gray-gray, well consolidated, some calcium crystalline veins (<1mm), some dissolution features (2mm) with fine calcite crystalline, trace orange oxidation staining within dissolution features, no stain, no odor |
| | | | | | | 58 | | |
| | | | | | | 59 | | 62' : Brown-pale yellow coarse crystalline dolomitic limestone stringer (2cm) |
| | | | | | | 60 | | 63-65' : Abundant calcite crystalline veins (<1mm), pale green-gray, poorly consolidated |
| | | | | | | 61 | | |
| | | | | | | 62 | | 65-69' : MUDSTONE, moist, reddish brown, poorly consolidated, high plasticity, cohesive, abundant coarse crystalline gypsum, few pale green-gray mottling, no stain, no odor |
| | | | | | | 63 | | |
| | | | | | | 64 | | 69-81' : GYPSUM with Anhydrite, dry, greenish gray, some pale yellow, well consolidated, finr crystalline, 20% anhydrite, no stain, no odor |
| D | | | N | | | 65 | CH-S | |
| | | | | | | 66 | | |
| | | | | | | 67 | | |
| | | | | | | 68 | | |
| | | | | | | 69 | GYP | |
| D | | | N | | | 70 | | |
| | | | | | | 71 | | |
| | | | | | | 72 | | |
| | | | | | | 73 | | |
| | | | | | | 74 | | |
| | | | | | | 75 | | |

| WSP USA<br>508 West Stevens Street<br>Carlsbad, New Mexico 88220 | BH or PH Name: BH01 (C-04494) | Date: 11/18/2020. 12/02/2020, 1/5/2021 |
|---|---|---|
| | Site Name: Remuda North 25 Observation Well | |
| | RP or Incident Number: | |
| | LTE Job Number: TE012919039 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By BB, LAD, FS | Method: Hollow Stem Auger, sonic |
| Lat/Long: | Field Screening: | Hole Diameter: 6.25", 4.25" / Total Depth: 105' |

Comments:
Lithologic log only, no field screenings

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 76 | GYP | 69-81' : GYPSUM with Anhydrite, dry, greenish gray, some pale yellow, well consolidated, finr crystalline, 20% anhydrite, no stain, no odor |
| | | | | | | 77 | | |
| | | | | | | 78 | | 81-98' : MUDSTONE, moist, dark reddish brown, moderately consolidated, high plasticity, cohesive, trace coarse crystalline gypsum inclusions, no stain, no odor |
| | | | | | | 79 | | |
| | | | | | | 80 | | 85-86.5' : greenish-gray well consolidated coarse crystalline gypsum/anhydrite stringer |
| | | | | | | 81 | | |
| D | | | N | | | 82 | CH-S | 90-98' : Some fine grain brown sand |
| | | | | | | 83 | | At 97' : dark gray-gray gyspum stringer (4cm) |
| | | | | | | 84 | | 98-99.5' : GYPSUM, dark gray-gray, some brown, dry, well consolidated, fine-coarse crystalline, no stain, no odor |
| | | | | | | 85 | | 99.5-105' : Sandy SILTSTONE, moist, brown, some gray-dark gray, poorly consolidated, 20% very fine grain sand, no stain, no odor |
| | | | | | | 86 | | |
| | | | | | | 87 | | |
| | | | | | | 88 | | |
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| | | | | | | 96 | | |
| | | | | | | 97 | | |
| | | | | | | 98 | | |
| D | | | N | | | 99 | GYP | |
| D | | | N | | | 100 | ML-S | |

WSP USA
508 West Stevens Street
Carlsbad, New Mexico 88220

| | |
|---|---|
| BH or PH Name: BH01 (C-04494) | Date: 11/18/2020. 12/02/2020, 1/5/2021 |
| Site Name: Remuda North 25 Observation Well | |
| RP or Incident Number: | |
| LTE Job Number: TE012919039 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By BB, LAD, FS / Method: Hollow Stem Auger, sonic |
| Lat/Long: / Field Screening: | Hole Diameter: 6.25", 4.25" / Total Depth: 105' |

Comments:
Lithologic log only, no field screenings

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| D | | | N | | | 101 | ML-S | 99.5-105' : Sandy SILTSTONE, moist, brown, some gray-dark gray, poorly consolidated, 20% very fine grain sand, no stain, no odor<br><br>At 102' : Thin (<1mm) laminated black/gray well consolidated shale stringer (4cm thick) |
| | | | | | | 102 | | |
| | | | | | | 103 | | |
| | | | | | | 104 | | |
| | | | | | | 105 | | |
| | | | | | | 106 | | TD @ 105' bgs (1/5/2021) |
| | | | | | | 107 | | |
| | | | | | | 108 | | |
| | | | | | | 109 | | |
| | | | | | | 110 | | |
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| | | | | | | 123 | | |
| | | | | | | 124 | | |
| | | | | | | 125 | | |

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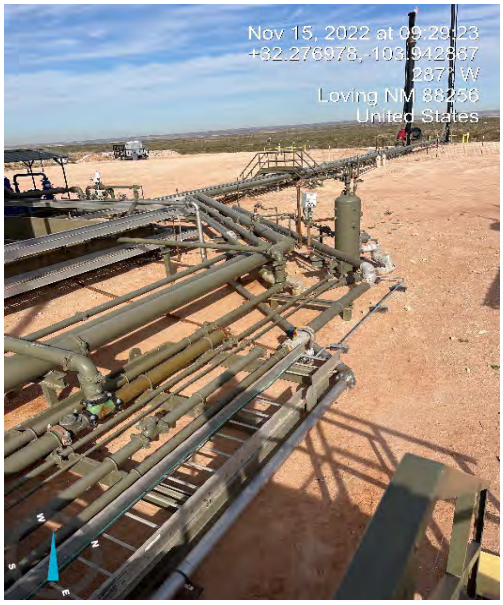
# APPENDIX B

## Photographic Log

ENSOLUM

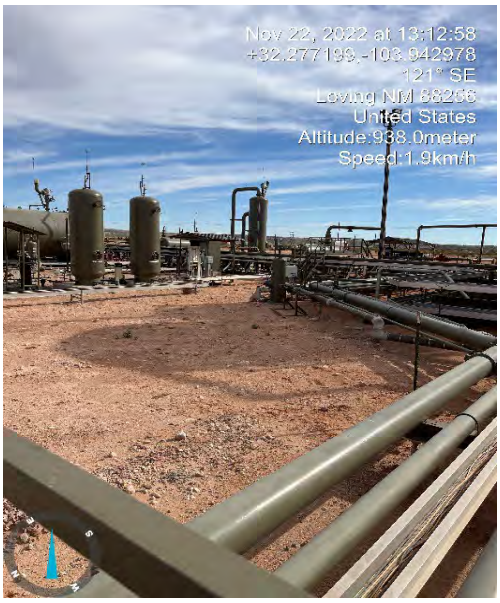
**Photographic Log**
XTO Energy, Inc
Remuda 100 CTB
Incident No. nAPP2226346738




Photograph: 1 Date: 11/15/2022
Description: Site Assessment actvities, release extent
View: Northwest


Photograph: 2 Date: 11/22/2022
Description: Delineation activities, SS01/BH01 area.
View: Southwest


Photograph: 3 Date: 11/22/2022
Description: Delineation activities, SS02/BH02 area.
View: Northeast




Photograph: 4 Date: 11/22/2022
Description: Delineation activities, site conditions.
View: Southeast

ENSOLUM

**Photographic Log**
XTO Energy, Inc
Remuda 100 CTB
Incident No. nAPP2226346738

Photograph: 5 Date: 12/6/2022
Description: Applying Micro-Blaze®, area of SS01
View: South

Photograph: 6 Date: 12/6/2022
Description: Micro-Blaze® applied, area of SS02
View: Southwest

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# APPENDIX C

## Lithologic Soil Sampling Logs

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

| | |
|---|---|
| Sample Name:BH01 | Date: 11/22/2022 |
| Site Name: Remuda 100 CTB | |
| Incident Number: nAPP2226346738 | |
| Job Number:03E1558138 | |

**LITHOLOGIC / SOIL SAMPLING LOG**

| | |
|---|---|
| Logged By: Meredith Roberts | Method: Hand Auger |
| Coordinates: 32.27708, -103.94295 | Hole Diameter: 3.5" |
| | 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. A 40% correction factor is included for chloride screening.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| M | 6,989 | 0.0 | N | SS01 | 0.5 | 0 | CCHE (fill) | 0-1, CALICHE, moist, light brown, poorly consolidated, no odor, light brown surface staining, fill. 0.25-1', no stain. |
| M | 12,006 | 0.2 | N | BH01 | 1 | 1 | SP | SAND with caliche gravel, reddish-brown, poorly graded, fine-very fine grain, no stain, no odor. |
| M | 1,388 | 0.1 | N | BH01A | 2 | 2 | | |
| | | | | | | | | Total depth 2 feet bgs, auger refusal. |

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

| | |
|---|---|
| Sample Name:BH02 | Date: 11/22/2022 |
| Site Name: Remuda 100 CTB | |
| Incident Number: nAPP2226346738 | |
| Job Number: 03E1558138 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: Meredith Roberts / Method: Hand Auger |
| Coordinates: 32.27708, -103.94295 | Hole Diameter: 3.5" / 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. A 40% correction factor is included for chloride screening.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| m | 12,006 | 0.0 | N | SS02 | 0.5 | 0 | CCHE (fill) | 0-1, CALICHE, moist, light brown, poorly consolidated, no odor, light brown surface staining, fill. 0.25-1', no stain. |
| m | 8,164 | 0.6 | N | BH02 | 1 | 1 | SP | SAND with caliche gravel, reddish-brown, poorly graded, fine-very fine grain, no stain, no odor. |
| m | 1,613 | 0.0 | N | BH02A | 2 | 2 | | |
| | | | | | | | | Total depth 2 feet bgs, auger refusal. |

ENSOLUM

# APPENDIX D

## Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Kalei Jennings
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Generated 11/28/2022 4:19:38 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E1558138

## JOB NUMBER

890-3484-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.





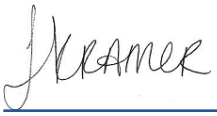
my EOL

# Eurofins Carlsbad

## Job Notes

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

## Authorization



Generated
11/28/2022 4:19:38 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 890-3484-1
SDG: 03E1558138

# Table of Contents

# Definitions/Glossary

Client: Ensolum Job ID: 890-3484-1
Project/Site: Remuda 100 CTB SDG: 03E1558138

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## Job ID: 890-3484-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3484-1**

**Receipt**
The samples were received on 11/15/2022 1:31 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.6°C

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-3484-1) and SS02 (890-3484-2).

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-40185/2-A) and (LCSD 880-40185/3-A). Evidence of matrix interferences is not obvious.

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

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

# Client Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## Client Sample ID: SS01

**Lab Sample ID: 890-3484-1**
**Matrix: Solid**
**Date Collected: 11/15/22 10:30**
**Date Received: 11/15/22 13:31**
**Sample Depth: 0.5'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | U | 0.00198 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 20:58 | 1 |
| Toluene | <0.00198 | U | 0.00198 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 20:58 | 1 |
| Ethylbenzene | <0.00198 | U | 0.00198 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 20:58 | 1 |
| m-Xylene & p-Xylene | <0.00396 | U | 0.00396 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 20:58 | 1 |
| o-Xylene | <0.00198 | U | 0.00198 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 20:58 | 1 |
| Xylenes, Total | <0.00396 | U | 0.00396 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 20:58 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *11/23/22 10:46* | *11/23/22 20:58* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *11/23/22 10:46* | *11/23/22 20:58* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00396 | U | 0.00396 | | mg/Kg | | | 11/28/22 15:35 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **2740** | | 49.8 | | mg/Kg | | | 11/23/22 12:17 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.8 | U | 49.8 | | mg/Kg | | 11/22/22 09:47 | 11/22/22 18:43 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **2350** | | 49.8 | | mg/Kg | | 11/22/22 09:47 | 11/22/22 18:43 | 1 |
| **Oil Range Organics (Over C28-C36)** | **390** | | 49.8 | | mg/Kg | | 11/22/22 09:47 | 11/22/22 18:43 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* | *11/22/22 09:47* | *11/22/22 18:43* | *1* |
| *o-Terphenyl* | *96* | | *70 - 130* | *11/22/22 09:47* | *11/22/22 18:43* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **5600** | | 49.7 | | mg/Kg | | | 11/22/22 01:00 | 10 |

## Client Sample ID: SS02

**Lab Sample ID: 890-3484-2**
**Matrix: Solid**
**Date Collected: 11/15/22 10:35**
**Date Received: 11/15/22 13:31**
**Sample Depth: 0.5'**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 21:18 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 21:18 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 21:18 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 21:18 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 21:18 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 21:18 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## Client Sample ID: SS02

**Date Collected: 11/15/22 10:35**
**Date Received: 11/15/22 13:31**
**Sample Depth: 0.5'**

## Lab Sample ID: 890-3484-2

**Matrix: Solid**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *11/23/22 10:46* | *11/23/22 21:18* | *1* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* | *11/23/22 10:46* | *11/23/22 21:18* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | mg/Kg | | | 11/28/22 15:35 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **2820** | | 50.0 | mg/Kg | | | 11/23/22 12:17 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 11/22/22 09:47 | 11/22/22 19:04 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **2400** | | 50.0 | mg/Kg | | 11/22/22 09:47 | 11/22/22 19:04 | 1 |
| **Oil Range Organics (Over C28-C36)** | **418** | | 50.0 | mg/Kg | | 11/22/22 09:47 | 11/22/22 19:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* | *11/22/22 09:47* | *11/22/22 19:04* | *1* |
| *o-Terphenyl* | *101* | | *70 - 130* | *11/22/22 09:47* | *11/22/22 19:04* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **13000** | | 250 | mg/Kg | | | 11/22/22 01:05 | 50 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## 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) |
| 880-21911-A-13-C MS | Matrix Spike | 94 | 107 |
| 880-21911-A-13-D MSD | Matrix Spike Duplicate | 93 | 95 |
| 890-3484-1 | SS01 | 99 | 108 |
| 890-3484-2 | SS02 | 99 | 110 |
| LCS 880-40279/1-A | Lab Control Sample | 86 | 112 |
| LCSD 880-40279/2-A | Lab Control Sample Dup | 85 | 101 |
| MB 880-40279/5-A | Method Blank | 77 | 102 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 890-3484-1 | SS01 | 85 | 96 |
| 890-3484-2 | SS02 | 85 | 101 |
| 890-3499-A-1-C MS | Matrix Spike | 96 | 101 |
| 890-3499-A-1-D MSD | Matrix Spike Duplicate | 113 | 118 |
| LCS 880-40185/2-A | Lab Control Sample | 163 S1+ | 190 S1+ |
| LCSD 880-40185/3-A | Lab Control Sample Dup | 157 S1+ | 180 S1+ |
| MB 880-40185/1-A | Method Blank | 108 | 126 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-40279/5-A**
**Matrix: Solid**
**Analysis Batch: 40266**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40279**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 13:13 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 13:13 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 13:13 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 13:13 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 13:13 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/23/22 10:46 | 11/23/22 13:13 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *77* | | *70 - 130* | *11/23/22 10:46* | *11/23/22 13:13* | *1* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* | *11/23/22 10:46* | *11/23/22 13:13* | *1* |

**Lab Sample ID: LCS 880-40279/1-A**
**Matrix: Solid**
**Analysis Batch: 40266**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40279**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.07796 | | mg/Kg | | 78 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09316 | | mg/Kg | | 93 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1035 | | mg/Kg | | 103 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2014 | | mg/Kg | | 101 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.07886 | | mg/Kg | | 79 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *86* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *112* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40279/2-A**
**Matrix: Solid**
**Analysis Batch: 40266**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40279**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.08511 | | mg/Kg | | 85 | 70 - 130 | 9 | 35 |
| Toluene | | | 0.100 | 0.1020 | | mg/Kg | | 102 | 70 - 130 | 9 | 35 |
| Ethylbenzene | | | 0.100 | 0.09992 | | mg/Kg | | 100 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1800 | | mg/Kg | | 90 | 70 - 130 | 11 | 35 |
| o-Xylene | | | 0.100 | 0.08784 | | mg/Kg | | 88 | 70 - 130 | 11 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *85* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* |

**Lab Sample ID: 880-21911-A-13-C MS**
**Matrix: Solid**
**Analysis Batch: 40266**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40279**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.101 | 0.08895 | | mg/Kg | | 88 | 70 - 130 | | |
| Toluene | <0.00202 | U | 0.101 | 0.1013 | | mg/Kg | | 100 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

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

**Lab Sample ID: 880-21911-A-13-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40266** — **Prep Batch: 40279**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00202 | U | 0.101 | 0.09801 | | mg/Kg | | 97 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.202 | 0.1772 | | mg/Kg | | 88 | 70 - 130 |
| o-Xylene | <0.00202 | U | 0.101 | 0.08434 | | mg/Kg | | 83 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* |

**Lab Sample ID: 880-21911-A-13-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40266** — **Prep Batch: 40279**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0996 | 0.09297 | | mg/Kg | | 93 | 70 - 130 | 4 | 35 |
| Toluene | <0.00202 | U | 0.0996 | 0.1113 | | mg/Kg | | 112 | 70 - 130 | 9 | 35 |
| Ethylbenzene | <0.00202 | U | 0.0996 | 0.1068 | | mg/Kg | | 107 | 70 - 130 | 9 | 35 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.199 | 0.1930 | | mg/Kg | | 97 | 70 - 130 | 9 | 35 |
| o-Xylene | <0.00202 | U | 0.0996 | 0.09242 | | mg/Kg | | 92 | 70 - 130 | 9 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *93* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *95* | | *70 - 130* |

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

**Lab Sample ID: MB 880-40185/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40170** — **Prep Batch: 40185**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/22/22 08:09 | 11/22/22 08:21 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/22/22 08:09 | 11/22/22 08:21 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/22/22 08:09 | 11/22/22 08:21 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *108* | | *70 - 130* | *11/22/22 08:09* | *11/22/22 08:21* | *1* |
| *o-Terphenyl* | *126* | | *70 - 130* | *11/22/22 08:09* | *11/22/22 08:21* | *1* |

**Lab Sample ID: LCS 880-40185/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40170** — **Prep Batch: 40185**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 816.2 | | mg/Kg | | 82 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 988.2 | | mg/Kg | | 99 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

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

**Lab Sample ID: LCS 880-40185/2-A**
**Matrix: Solid**
**Analysis Batch: 40170**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40185**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 163 | S1+ | 70 - 130 |
| o-Terphenyl | 190 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-40185/3-A**
**Matrix: Solid**
**Analysis Batch: 40170**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40185**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 827.6 | | mg/Kg | | 83 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 925.3 | | mg/Kg | | 93 | 70 - 130 | 7 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 157 | S1+ | 70 - 130 |
| o-Terphenyl | 180 | S1+ | 70 - 130 |

**Lab Sample ID: 890-3499-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 40170**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40185**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 865.2 | | mg/Kg | | 84 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 1010 | | mg/Kg | | 99 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 96 | | 70 - 130 |
| o-Terphenyl | 101 | | 70 - 130 |

**Lab Sample ID: 890-3499-A-1-D MSD**
**Matrix: Solid**
**Analysis Batch: 40170**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 40185**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 1028 | | mg/Kg | | 101 | 70 - 130 | 17 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 1191 | | mg/Kg | | 117 | 70 - 130 | 16 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 113 | | 70 - 130 |
| o-Terphenyl | 118 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-39830/1-A**
**Matrix: Solid**
**Analysis Batch: 40139**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 11/21/22 23:52 | 1 |

**Lab Sample ID: LCS 880-39830/2-A**
**Matrix: Solid**
**Analysis Batch: 40139**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 256.0 | | mg/Kg | | 102 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-39830/3-A**
**Matrix: Solid**
**Analysis Batch: 40139**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 256.0 | | mg/Kg | | 102 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-3481-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 40139**

**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 | 105 | | 250 | 373.7 | | mg/Kg | | 108 | 90 - 110 | | |

**Lab Sample ID: 890-3481-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 40139**

**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 | 105 | | 250 | 373.5 | | mg/Kg | | 108 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## GC VOA

### Analysis Batch: 40266

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Total/NA | Solid | 8021B | 40279 |
| 890-3484-2 | SS02 | Total/NA | Solid | 8021B | 40279 |
| MB 880-40279/5-A | Method Blank | Total/NA | Solid | 8021B | 40279 |
| LCS 880-40279/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40279 |
| LCSD 880-40279/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40279 |
| 880-21911-A-13-C MS | Matrix Spike | Total/NA | Solid | 8021B | 40279 |
| 880-21911-A-13-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 40279 |

### Prep Batch: 40279

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Total/NA | Solid | 5035 | |
| 890-3484-2 | SS02 | Total/NA | Solid | 5035 | |
| MB 880-40279/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40279/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40279/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-21911-A-13-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-21911-A-13-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 40483

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Total/NA | Solid | Total BTEX | |
| 890-3484-2 | SS02 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 40170

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Total/NA | Solid | 8015B NM | 40185 |
| 890-3484-2 | SS02 | Total/NA | Solid | 8015B NM | 40185 |
| MB 880-40185/1-A | Method Blank | Total/NA | Solid | 8015B NM | 40185 |
| LCS 880-40185/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 40185 |
| LCSD 880-40185/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 40185 |
| 890-3499-A-1-C MS | Matrix Spike | Total/NA | Solid | 8015B NM | 40185 |
| 890-3499-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 40185 |

### Prep Batch: 40185

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Total/NA | Solid | 8015NM Prep | |
| 890-3484-2 | SS02 | Total/NA | Solid | 8015NM Prep | |
| MB 880-40185/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-40185/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-40185/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-3499-A-1-C MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-3499-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 40310

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Total/NA | Solid | 8015 NM | |
| 890-3484-2 | SS02 | Total/NA | Solid | 8015 NM | |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## HPLC/IC

### Leach Batch: 39830

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Soluble | Solid | DI Leach | |
| 890-3484-2 | SS02 | Soluble | Solid | DI Leach | |
| MB 880-39830/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-39830/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-39830/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-3481-A-1-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-3481-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 40139

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Soluble | Solid | 300.0 | 39830 |
| 890-3484-2 | SS02 | Soluble | Solid | 300.0 | 39830 |
| MB 880-39830/1-A | Method Blank | Soluble | Solid | 300.0 | 39830 |
| LCS 880-39830/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 39830 |
| LCSD 880-39830/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 39830 |
| 890-3481-A-1-B MS | Matrix Spike | Soluble | Solid | 300.0 | 39830 |
| 890-3481-A-1-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 39830 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## Client Sample ID: SS01

**Date Collected: 11/15/22 10:30**
**Date Received: 11/15/22 13:31**

## Lab Sample ID: 890-3484-1

**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 | | | 5.05 g | 5 mL | 40279 | 11/23/22 10:46 | EL | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40266 | 11/23/22 20:58 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40483 | 11/28/22 15:35 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 40310 | 11/23/22 12:17 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.04 g | 10 mL | 40185 | 11/22/22 09:47 | AM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 40170 | 11/22/22 18:43 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 39830 | 11/17/22 14:36 | CH | EET MID |
| Soluble | Analysis | 300.0 | | 10 | 50 mL | 50 mL | 40139 | 11/22/22 01:00 | CH | EET MID |

## Client Sample ID: SS02

**Date Collected: 11/15/22 10:35**
**Date Received: 11/15/22 13:31**

## Lab Sample ID: 890-3484-2

**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 | | | 5.03 g | 5 mL | 40279 | 11/23/22 10:46 | EL | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40266 | 11/23/22 21:18 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40483 | 11/28/22 15:35 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 40310 | 11/23/22 12:17 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 40185 | 11/22/22 09:47 | AM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 40170 | 11/22/22 19:04 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 39830 | 11/17/22 14:36 | CH | EET MID |
| Soluble | Analysis | 300.0 | | 50 | 50 mL | 50 mL | 40139 | 11/22/22 01:05 | CH | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

## 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: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3484-1
SDG: 03E1558138

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3484-1 | SS01 | Solid | 11/15/22 10:30 | 11/15/22 13:31 | 0.5' |
| 890-3484-2 | SS02 | Solid | 11/15/22 10:35 | 11/15/22 13:31 | 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: _____

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| | | | |
|---|---|---|---|
| Project Manager: | Ben Belill | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum, LLC | Company Name: | XTO Energy |
| Address: | 3122 Nat'l Parks Hwy | Address: | 3104 E Greene St |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 989-854-0852 Email: | | bbelill@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: | Remuda 100 CTB | Turn Around | |
| Project Number: | 03E1558138 | ☑ Routine ☐ Rush | |
| Project Location: | 32.27708, -103.942 | Due Date: | |
| Sampler's Name: | Meredith Roberts | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No | |
| Samples Received Intact: | (Yes) No | Thermometer ID: | IR#8 | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 3.4 | |
| Total Containers: | | Corrected Temperature: | 3.2 | |

**Preservative Codes**

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Chlorides | BTEX | TPH |
|---|---|---|---|---|---|---|---|---|---|---|
| SS01 | S | 11/15/22 | 1030 | 0.5' | G | 1 | | X | X | X |
| SS02 | S | ↓ | 1035 | ↓ | ↓ | ↓ | | ↓ | ↓ | ↓ |

890-3484 Chain of Custody

**Sample Comments**

Incident #:
nAPP2226346738

Cost Center:
1067621001

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 | | 11/15/22 1325 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3484-1
SDG Number: 03E1558138

**Login Number: 3484**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3484-1
SDG Number: 03E1558138

**Login Number: 3484**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 11/17/22 02:07 PM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/2/2022 3:58:06 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E1558138

## JOB NUMBER

890-3552-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.





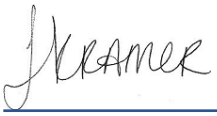
my EOL

# Eurofins Carlsbad

## Job Notes

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

## Authorization



Generated
12/2/2022 3:58:06 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 890-3552-1
SDG: 03E1558138

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | 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: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## Job ID: 890-3552-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3552-1**

**Receipt**
The sample was received on 11/22/2022 3:04 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C

**Receipt Exceptions**
The following sample was received and analyzed from an unpreserved bulk soil jar: SS04 (890-3552-1).

**GC VOA**
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-40625 and analytical batch 880-40842 was outside the control limits.

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

**GC Semi VOA**
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-40514 and analytical batch 880-40408 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-40514/2-A) and (LCSD 880-40514/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-21947-A-1-D). 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 (890-3552-1). 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 880-40514 and analytical batch 880-40408 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-40514 and analytical batch 880-40408 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.

**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: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## Client Sample ID: SS04

**Date Collected: 11/22/22 12:40**
**Date Received: 11/22/22 15:04**
**Sample Depth: 0.5'**

## Lab Sample ID: 890-3552-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 14:48 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 14:48 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 14:48 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 14:48 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 14:48 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 14:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *113* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 14:48* | *1* |
| *1,4-Difluorobenzene (Surr)* | *89* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 14:48* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | | mg/Kg | | | 12/02/22 16:23 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 11/29/22 12:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 05:47 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 05:47 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 05:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *144* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 05:47* | *1* |
| *o-Terphenyl* | *143* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 05:47* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **23.7** | | 4.97 | | mg/Kg | | | 11/29/22 18:56 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## 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) |
| 890-3549-A-1-C MS | Matrix Spike | 114 | 102 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | 104 | 101 |
| 890-3552-1 | SS04 | 113 | 89 |
| LCS 880-40625/1-A | Lab Control Sample | 105 | 100 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | 104 | 97 |
| MB 880-40625/5-A | Method Blank | 68 S1- | 94 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-21947-A-1-E MS | Matrix Spike | 120 | 106 |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | 100 | 104 |
| 890-3552-1 | SS04 | 144 S1+ | 143 S1+ |
| LCS 880-40514/2-A | Lab Control Sample | 135 S1+ | 139 S1+ |
| LCSD 880-40514/3-A | Lab Control Sample Dup | 190 S1+ | 187 S1+ |
| MB 880-40514/1-A | Method Blank | 136 S1+ | 150 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-40625/5-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *68* | *S1-* | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |

**Lab Sample ID: LCS 880-40625/1-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1252 | | mg/Kg | | 125 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1206 | | mg/Kg | | 121 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1093 | | mg/Kg | | 109 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2198 | | mg/Kg | | 110 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40625/2-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1186 | | mg/Kg | | 119 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.1151 | | mg/Kg | | 115 | 70 - 130 | 5 | 35 |
| Ethylbenzene | | | 0.100 | 0.1044 | | mg/Kg | | 104 | 70 - 130 | 5 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2094 | | mg/Kg | | 105 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | 0 | 35 |

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

**Lab Sample ID: 890-3549-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0996 | 0.1021 | | mg/Kg | | 103 | 70 - 130 | | |
| Toluene | <0.00201 | U | 0.0996 | 0.1062 | | mg/Kg | | 107 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

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

**Lab Sample ID: 890-3549-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00201 | U | 0.0996 | 0.1009 | | mg/Kg | | 101 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.199 | 0.2022 | | mg/Kg | | 101 | 70 - 130 |
| o-Xylene | <0.00201 | U | 0.0996 | 0.1035 | | mg/Kg | | 104 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 890-3549-A-1-D MSD**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0990 | 0.09136 | | mg/Kg | | 92 | 70 - 130 | 11 | 35 |
| Toluene | <0.00201 | U | 0.0990 | 0.09165 | | mg/Kg | | 93 | 70 - 130 | 15 | 35 |
| Ethylbenzene | <0.00201 | U | 0.0990 | 0.08677 | | mg/Kg | | 88 | 70 - 130 | 15 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.198 | 0.1732 | | mg/Kg | | 87 | 70 - 130 | 15 | 35 |
| o-Xylene | <0.00201 | U | 0.0990 | 0.08889 | | mg/Kg | | 90 | 70 - 130 | 15 | 35 |

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

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

**Lab Sample ID: MB 880-40514/1-A**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *136* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 06:30* | *1* |
| *o-Terphenyl* | *150* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 06:30* | *1* |

**Lab Sample ID: LCS 880-40514/2-A**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1074 | | mg/Kg | | 107 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 995.7 | | mg/Kg | | 100 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

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

**Lab Sample ID: LCS 880-40514/2-A**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 135 | S1+ | 70 - 130 |
| o-Terphenyl | 139 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-40514/3-A**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 903.6 | | mg/Kg | | 90 | 70 - 130 | 17 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 990.3 | | mg/Kg | | 99 | 70 - 130 | 1 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 190 | S1+ | 70 - 130 |
| o-Terphenyl | 187 | S1+ | 70 - 130 |

**Lab Sample ID: 880-21947-A-1-E MS**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F2 | 999 | 1202 | | mg/Kg | | 117 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U F1 | 999 | 1382 | F1 | mg/Kg | | 138 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 120 | | 70 - 130 |
| o-Terphenyl | 106 | | 70 - 130 |

**Lab Sample ID: 880-21947-A-1-F MSD**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F2 | 997 | 926.9 | F2 | mg/Kg | | 90 | 70 - 130 | 26 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U F1 | 997 | 1267 | | mg/Kg | | 127 | 70 - 130 | 9 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 100 | | 70 - 130 |
| o-Terphenyl | 104 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-40386/1-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 11/29/22 09:19 | 1 |

**Lab Sample ID: LCS 880-40386/2-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 880-40386/3-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 242.0 | | mg/Kg | | 97 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-3551-A-4-A MS**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 299.9 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: 890-3551-A-4-A MSD**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 300.2 | | mg/Kg | | 101 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## GC VOA

### Prep Batch: 40625

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Total/NA | Solid | 5035 | |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 40842

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Total/NA | Solid | 8021B | 40625 |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 8021B | 40625 |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40625 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 40625 |

### Analysis Batch: 40912

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 40408

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Total/NA | Solid | 8015B NM | 40514 |
| MB 880-40514/1-A | Method Blank | Total/NA | Solid | 8015B NM | 40514 |
| LCS 880-40514/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 40514 |
| LCSD 880-40514/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 40514 |
| 880-21947-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015B NM | 40514 |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 40514 |

### Prep Batch: 40514

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Total/NA | Solid | 8015NM Prep | |
| MB 880-40514/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-40514/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-40514/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-21947-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 40607

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 40386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Soluble | Solid | DI Leach | |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## HPLC/IC (Continued)

### Leach Batch: 40386 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 40550

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Soluble | Solid | 300.0 | 40386 |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | 300.0 | 40386 |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 40386 |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 40386 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## Client Sample ID: SS04

**Date Collected: 11/22/22 12:40**
**Date Received: 11/22/22 15:04**

## Lab Sample ID: 890-3552-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.99 g | 5 mL | 40625 | 11/29/22 16:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40842 | 12/02/22 14:48 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40912 | 12/02/22 16:23 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 40607 | 11/29/22 12:08 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 40514 | 11/28/22 16:34 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 40408 | 11/29/22 05:47 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 40386 | 11/28/22 08:56 | CH | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 40550 | 11/29/22 18:56 | SMC | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

## 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: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3552-1
SDG: 03E1558138

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3552-1 | SS04 | Solid | 11/22/22 12:40 | 11/22/22 15:04 | 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: | Ben Belill | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum, LLC | Company Name: | XTO Energy |
| Address: | 3122 Nat'l Parks Hwy | Address: | 3104 E Greene St |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 989-854-0852 | Email: | bbelill@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: | Remuda 100 CTB | Turn Around | Pres. Code |
| Project Number: | 03E1558138 | ☑ Routine ☐ Rush | |
| Project Location: | 32.27708, 703.94295 | Due Date: | |
| Sampler's Name: | Meredith Roberts | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | TAM 007 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 5.6 |
| Total Containers: | | Corrected Temperature: | 5.4 |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Chlorides | BTEX | TPH |
|---|---|---|---|---|---|---|---|---|---|
| SS04 | S | 11/22/22 | 1240 | 0.5' | G | 1 | X | X | X |

890-3552 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**

Incident #: nAPP2226346738

Cost Center: 1067621001

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 Stief | 11/22/22 1504 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

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

# Chain of Custody Record

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| Client Information (Sub Contract Lab) | Sampler | Lab PM: Kramer Jessica | Carrier Tracking No(s) | COC No: 890-1042 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: Jessica Kramer@et.eurofinsus com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Texas | | Job #: 890-3552-1 |
| Address: 1211 W Florida Ave | Due Date Requested: 11/30/2022 | | | |
| City: Midland | TAT Requested (days): | | | |
| State, Zip: TX, 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO #: | | | |
| Email | WO #: | | | |
| Project Name: Remuda 100 CTB | Project #: 89000093 | | | |
| Site | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M - Hexane, N None, O AsNaO2, P Na2O4S, Q - Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8015MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| SS04 (890-3552-1) | 11/22/22 | 12 40 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note Since laboratory accreditations are subject to change Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by | Date | Time | Method of Shipment: |
|---|---|---|---|

| | Relinquished by | Date/Time: | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|---|
| 1 | Relinquished by: Clue | Date/Time: | Company | Received by: Kramer | Date/Time: 11/23 1134 | Company |
| 2 | Relinquished by: | Date/Time: | Company | Received by: | Date/Time | Company |
| 3 | Relinquished by: | Date/Time | Company | Received by: | Date/Time | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3552-1
SDG Number: 03E1558138

**Login Number: 3552**
**List Number: 1**
**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3552-1
SDG Number: 03E1558138

**Login Number: 3552**
**List Number: 2**
**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**
**List Creation: 11/23/22 11:47 AM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/2/2022 3:59:07 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E1558138

## JOB NUMBER

890-3555-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.





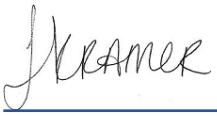
my EOL

# Eurofins Carlsbad

## Job Notes

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

## Authorization



Generated
12/2/2022 3:59:07 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 890-3555-1
SDG: 03E1558138

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | 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: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

## Job ID: 890-3555-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3555-1**

**Receipt**
The sample was received on 11/22/2022 3:00 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C

**GC VOA**
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-40625 and analytical batch 880-40842 was outside the control limits.

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

**GC Semi VOA**
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-40514 and analytical batch 880-40408 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-40514/2-A) and (LCSD 880-40514/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-21947-A-1-D). 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: BH02A (890-3555-1). 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 880-40514 and analytical batch 880-40408 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-40514 and analytical batch 880-40408 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.

**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: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

## Client Sample ID: BH02A

**Date Collected: 11/22/22 11:15**
**Date Received: 11/22/22 15:00**
**Sample Depth: 2**

## Lab Sample ID: 890-3555-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 16:07 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 16:07 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 16:07 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 16:07 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 16:07 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 16:07 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 16:07* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 16:07* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 12/02/22 16:26 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 11/29/22 12:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 05:47 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 05:47 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 05:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *137* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 05:47* | *1* |
| *o-Terphenyl* | *146* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 05:47* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1570** | | 24.8 | | mg/Kg | | | 11/29/22 12:58 | 5 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

## 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) |
| 890-3549-A-1-C MS | Matrix Spike | 114 | 102 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | 104 | 101 |
| 890-3555-1 | BH02A | 102 | 100 |
| LCS 880-40625/1-A | Lab Control Sample | 105 | 100 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | 104 | 97 |
| MB 880-40625/5-A | Method Blank | 68 S1- | 94 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-21947-A-1-E MS | Matrix Spike | 120 | 106 |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | 100 | 104 |
| 890-3555-1 | BH02A | 137 S1+ | 146 S1+ |
| LCS 880-40514/2-A | Lab Control Sample | 135 S1+ | 139 S1+ |
| LCSD 880-40514/3-A | Lab Control Sample Dup | 190 S1+ | 187 S1+ |
| MB 880-40514/1-A | Method Blank | 136 S1+ | 150 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-40625/5-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *68* | *S1-* | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |

**Lab Sample ID: LCS 880-40625/1-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1252 | | mg/Kg | | 125 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1206 | | mg/Kg | | 121 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1093 | | mg/Kg | | 109 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2198 | | mg/Kg | | 110 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40625/2-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1186 | | mg/Kg | | 119 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.1151 | | mg/Kg | | 115 | 70 - 130 | 5 | 35 |
| Ethylbenzene | | | 0.100 | 0.1044 | | mg/Kg | | 104 | 70 - 130 | 5 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2094 | | mg/Kg | | 105 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | 0 | 35 |

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

**Lab Sample ID: 890-3549-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0996 | 0.1021 | | mg/Kg | | 103 | 70 - 130 | | |
| Toluene | <0.00201 | U | 0.0996 | 0.1062 | | mg/Kg | | 107 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

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

**Lab Sample ID: 890-3549-A-1-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40842** — **Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00201 | U | 0.0996 | 0.1009 | | mg/Kg | | 101 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.199 | 0.2022 | | mg/Kg | | 101 | 70 - 130 |
| o-Xylene | <0.00201 | U | 0.0996 | 0.1035 | | mg/Kg | | 104 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 890-3549-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40842** — **Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0990 | 0.09136 | | mg/Kg | | 92 | 70 - 130 | 11 | 35 |
| Toluene | <0.00201 | U | 0.0990 | 0.09165 | | mg/Kg | | 93 | 70 - 130 | 15 | 35 |
| Ethylbenzene | <0.00201 | U | 0.0990 | 0.08677 | | mg/Kg | | 88 | 70 - 130 | 15 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.198 | 0.1732 | | mg/Kg | | 87 | 70 - 130 | 15 | 35 |
| o-Xylene | <0.00201 | U | 0.0990 | 0.08889 | | mg/Kg | | 90 | 70 - 130 | 15 | 35 |

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

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

**Lab Sample ID: MB 880-40514/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40408** — **Prep Batch: 40514**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *136* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 06:30* | *1* |
| *o-Terphenyl* | *150* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 06:30* | *1* |

**Lab Sample ID: LCS 880-40514/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40408** — **Prep Batch: 40514**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 1000 | 1074 | | mg/Kg | | 107 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 1000 | 995.7 | | mg/Kg | | 100 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

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

**Lab Sample ID: LCS 880-40514/2-A**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 135 | S1+ | 70 - 130 |
| o-Terphenyl | 139 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-40514/3-A**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 903.6 | | mg/Kg | | 90 | 70 - 130 | 17 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 990.3 | | mg/Kg | | 99 | 70 - 130 | 1 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 190 | S1+ | 70 - 130 |
| o-Terphenyl | 187 | S1+ | 70 - 130 |

**Lab Sample ID: 880-21947-A-1-E MS**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F2 | 999 | 1202 | | mg/Kg | | 117 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U F1 | 999 | 1382 | F1 | mg/Kg | | 138 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 120 | | 70 - 130 |
| o-Terphenyl | 106 | | 70 - 130 |

**Lab Sample ID: 880-21947-A-1-F MSD**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F2 | 997 | 926.9 | F2 | mg/Kg | | 90 | 70 - 130 | 26 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U F1 | 997 | 1267 | | mg/Kg | | 127 | 70 - 130 | 9 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 100 | | 70 - 130 |
| o-Terphenyl | 104 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-40386/1-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 11/29/22 09:19 | 1 |

**Lab Sample ID: LCS 880-40386/2-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 880-40386/3-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 242.0 | | mg/Kg | | 97 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-3551-A-4-A MS**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 299.9 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: 890-3551-A-4-A MSD**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 300.2 | | mg/Kg | | 101 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

## GC VOA

### Prep Batch: 40625

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Total/NA | Solid | 5035 | |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 40842

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Total/NA | Solid | 8021B | 40625 |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 8021B | 40625 |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40625 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 40625 |

### Analysis Batch: 40914

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 40408

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Total/NA | Solid | 8015B NM | 40514 |
| MB 880-40514/1-A | Method Blank | Total/NA | Solid | 8015B NM | 40514 |
| LCS 880-40514/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 40514 |
| LCSD 880-40514/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 40514 |
| 880-21947-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015B NM | 40514 |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 40514 |

### Prep Batch: 40514

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Total/NA | Solid | 8015NM Prep | |
| MB 880-40514/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-40514/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-40514/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-21947-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 40608

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 40386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Soluble | Solid | DI Leach | |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

## HPLC/IC (Continued)

### Leach Batch: 40386 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 40550

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Soluble | Solid | 300.0 | 40386 |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | 300.0 | 40386 |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 40386 |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 40386 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

**Client Sample ID: BH02A**
**Date Collected: 11/22/22 11:15**
**Date Received: 11/22/22 15:00**

**Lab Sample ID: 890-3555-1**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.98 g | 5 mL | 40625 | 11/29/22 16:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40842 | 12/02/22 16:07 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40914 | 12/02/22 16:26 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 40608 | 11/29/22 12:08 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 40514 | 11/28/22 16:34 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 40408 | 11/29/22 05:47 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.04 g | 50 mL | 40386 | 11/28/22 08:56 | CH | EET MID |
| Soluble | Analysis | 300.0 | | 5 | | | 40550 | 11/29/22 12:58 | SMC | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

## 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: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3555-1
SDG: 03E1558138

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3555-1 | BH02A | Solid | 11/22/22 11:15 | 11/22/22 15:00 | 2 |

eurofins | Environment Testing Xenco

# Chain of Custody

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

Work Order No: _____

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| | | | |
|---|---|---|---|
| Project Manager: | Ben Belill | Bill to: (if different) | Garrett Greene |
| Company Name: | Ensolum, LLC | Company Name: | XTO Energy |
| Address: | 3122 Nat'l Parks Hwy | Address: | 3104 E Greene St |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 989.854.0852 Email: | | bbelill@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: | Remuda 100 CTB | Turn Around | |
| Project Number: | 03E1558138 | ☑ Routine ☐ Rush | |
| Project Location: | 32.27708, -103.94295 | Due Date: | |
| Sampler's Name: | Meredith Roberts | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Samples Received Intact: | Yes No | Thermometer ID: | TAM 007 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 5.6 |
| Total Containers: | | Corrected Temperature: | 5.4 |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Parameters: Chlorides | BTEX | TPH |
|---|---|---|---|---|---|---|---|---|---|---|
| BH02A | S | 11/22/22 | 1115 | 2' | G | 1 | | X | X | X |

890-3555 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**

Incident #: nAPP2226346738

Cost Center: 1067621001

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 |
|---|---|---|---|---|---|
| [signature] | [signature] | 11/22/22 1504 | | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

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

# Chain of Custody Record

eurofins | Environment Testing

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Kramer Jessica | Carrier Tracking No(s): | COC No: 890-1042 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: Jessica Kramer@et.eurofinsus com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Texas | | Job #: 890-3555-1 |
| Address: 1211 W Florida Ave | Due Date Requested: 11/30/2022 | | | |
| City: Midland | TAT Requested (days): | | | |
| State Zip: TX 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: Remuda 100 CTB | Project #: 89000093 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

A - HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O - AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8015MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| BH02A (890-3555-1) | 11/22/22 | 11 15 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note Since laboratory accreditations are subject to change Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by | Date | Time. | Method of Shipment: |
|---|---|---|---|

| Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|
| Clue | | | Kramer | 11/23 1134 | |
| Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
| Relinquished by | Date/Time | Company | Received by | Date/Time | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks. |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3555-1
SDG Number: 03E1558138

**Login Number: 3555**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3555-1
SDG Number: 03E1558138

**Login Number: 3555**
**List Number: 2**
**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**
**List Creation: 11/23/22 11:47 AM**

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

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/5/2022 1:33:05 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E1558138

## JOB NUMBER

890-3556-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.





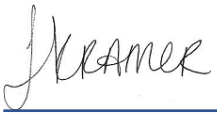
my EOL

# Eurofins Carlsbad

## Job Notes

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

## Authorization



Generated
12/5/2022 1:33:05 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 890-3556-1
SDG: 03E1558138

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | 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: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## Job ID: 890-3556-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3556-1**

**Receipt**
The sample was received on 11/22/2022 3:00 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C

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

**GC Semi VOA**
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-40514 and analytical batch 880-40408 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-40514/2-A) and (LCSD 880-40514/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-21947-A-1-D). 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: BH02 (890-3556-1). 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 880-40514 and analytical batch 880-40408 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-40514 and analytical batch 880-40408 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.

**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: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## Client Sample ID: BH02

**Date Collected: 11/22/22 11:20**
**Date Received: 11/22/22 15:00**
**Sample Depth: 1**

## Lab Sample ID: 890-3556-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:05 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:05 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:05 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:05 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:05 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *118* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 18:05* | *1* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 18:05* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 12/05/22 14:17 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 11/29/22 12:08 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:08 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:08 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:08 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *173* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 06:08* | *1* |
| *o-Terphenyl* | *158* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 06:08* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **6150** | | 50.5 | | mg/Kg | | | 11/29/22 13:07 | 10 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## 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) |
| 890-3549-A-1-C MS | Matrix Spike | 114 | 102 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | 104 | 101 |
| 890-3556-1 | BH02 | 118 | 103 |
| LCS 880-40625/1-A | Lab Control Sample | 105 | 100 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | 104 | 97 |
| MB 880-40625/5-A | Method Blank | 68 S1- | 94 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-21947-A-1-E MS | Matrix Spike | 120 | 106 |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | 100 | 104 |
| 890-3556-1 | BH02 | 173 S1+ | 158 S1+ |
| LCS 880-40514/2-A | Lab Control Sample | 135 S1+ | 139 S1+ |
| LCSD 880-40514/3-A | Lab Control Sample Dup | 190 S1+ | 187 S1+ |
| MB 880-40514/1-A | Method Blank | 136 S1+ | 150 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-40625/5-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *68* | *S1-* | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |

**Lab Sample ID: LCS 880-40625/1-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1252 | | mg/Kg | | 125 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1206 | | mg/Kg | | 121 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1093 | | mg/Kg | | 109 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2198 | | mg/Kg | | 110 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40625/2-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1186 | | mg/Kg | | 119 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.1151 | | mg/Kg | | 115 | 70 - 130 | 5 | 35 |
| Ethylbenzene | | | 0.100 | 0.1044 | | mg/Kg | | 104 | 70 - 130 | 5 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2094 | | mg/Kg | | 105 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | 0 | 35 |

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

**Lab Sample ID: 890-3549-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0996 | 0.1021 | | mg/Kg | | 103 | 70 - 130 | | |
| Toluene | <0.00201 | U | 0.0996 | 0.1062 | | mg/Kg | | 107 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

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

**Lab Sample ID: 890-3549-A-1-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40842** — **Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00201 | U | 0.0996 | 0.1009 | | mg/Kg | | 101 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.199 | 0.2022 | | mg/Kg | | 101 | 70 - 130 |
| o-Xylene | <0.00201 | U | 0.0996 | 0.1035 | | mg/Kg | | 104 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 890-3549-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40842** — **Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0990 | 0.09136 | | mg/Kg | | 92 | 70 - 130 | 11 | 35 |
| Toluene | <0.00201 | U | 0.0990 | 0.09165 | | mg/Kg | | 93 | 70 - 130 | 15 | 35 |
| Ethylbenzene | <0.00201 | U | 0.0990 | 0.08677 | | mg/Kg | | 88 | 70 - 130 | 15 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.198 | 0.1732 | | mg/Kg | | 87 | 70 - 130 | 15 | 35 |
| o-Xylene | <0.00201 | U | 0.0990 | 0.08889 | | mg/Kg | | 90 | 70 - 130 | 15 | 35 |

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

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

**Lab Sample ID: MB 880-40514/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40408** — **Prep Batch: 40514**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 11/28/22 16:34 | 11/29/22 06:30 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *136* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 06:30* | *1* |
| *o-Terphenyl* | *150* | *S1+* | *70 - 130* | *11/28/22 16:34* | *11/29/22 06:30* | *1* |

**Lab Sample ID: LCS 880-40514/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40408** — **Prep Batch: 40514**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 1000 | 1074 | | mg/Kg | | 107 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 1000 | 995.7 | | mg/Kg | | 100 | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

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

**Lab Sample ID: LCS 880-40514/2-A**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 135 | S1+ | 70 - 130 |
| o-Terphenyl | 139 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-40514/3-A**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 903.6 | | mg/Kg | | 90 | 70 - 130 | 17 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 990.3 | | mg/Kg | | 99 | 70 - 130 | 1 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 190 | S1+ | 70 - 130 |
| o-Terphenyl | 187 | S1+ | 70 - 130 |

**Lab Sample ID: 880-21947-A-1-E MS**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F2 | 999 | 1202 | | mg/Kg | | 117 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U F1 | 999 | 1382 | F1 | mg/Kg | | 138 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 120 | | 70 - 130 |
| o-Terphenyl | 106 | | 70 - 130 |

**Lab Sample ID: 880-21947-A-1-F MSD**
**Matrix: Solid**
**Analysis Batch: 40408**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 40514**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U F2 | 997 | 926.9 | F2 | mg/Kg | | 90 | 70 - 130 | 26 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U F1 | 997 | 1267 | | mg/Kg | | 127 | 70 - 130 | 9 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 100 | | 70 - 130 |
| o-Terphenyl | 104 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-40386/1-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 11/29/22 09:19 | 1 |

**Lab Sample ID: LCS 880-40386/2-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 880-40386/3-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 242.0 | | mg/Kg | | 97 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-3551-A-4-A MS**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 299.9 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: 890-3551-A-4-A MSD**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 300.2 | | mg/Kg | | 101 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## GC VOA

### Prep Batch: 40625

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Total/NA | Solid | 5035 | |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 40842

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Total/NA | Solid | 8021B | 40625 |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 8021B | 40625 |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40625 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 40625 |

### Analysis Batch: 41052

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Analysis Batch: 40408

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Total/NA | Solid | 8015B NM | 40514 |
| MB 880-40514/1-A | Method Blank | Total/NA | Solid | 8015B NM | 40514 |
| LCS 880-40514/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 40514 |
| LCSD 880-40514/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 40514 |
| 880-21947-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015B NM | 40514 |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 40514 |

### Prep Batch: 40514

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Total/NA | Solid | 8015NM Prep | |
| MB 880-40514/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-40514/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-40514/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-21947-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-21947-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 40609

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 40386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Soluble | Solid | DI Leach | |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## HPLC/IC (Continued)

### Leach Batch: 40386 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 40550

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Soluble | Solid | 300.0 | 40386 |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | 300.0 | 40386 |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 40386 |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 40386 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## Client Sample ID: BH02

**Date Collected: 11/22/22 11:20**
**Date Received: 11/22/22 15:00**

## Lab Sample ID: 890-3556-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 40625 | 11/29/22 16:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40842 | 12/02/22 18:05 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 41052 | 12/05/22 14:17 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 40609 | 11/29/22 12:08 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 40514 | 11/28/22 16:34 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 40408 | 11/29/22 06:08 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.95 g | 50 mL | 40386 | 11/28/22 08:56 | CH | EET MID |
| Soluble | Analysis | 300.0 | | 10 | | | 40550 | 11/29/22 13:07 | SMC | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

## 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: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3556-1
SDG: 03E1558138

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3556-1 | BH02 | Solid | 11/22/22 11:20 | 11/22/22 15:00 | 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: | Ben Belill | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum, LLC | Company Name: | XTO Energy |
| Address: | 3122 Nat'l Parks Hwy | Address: | 3104 E Greene St |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 989.854.0852 Email: | | bbelill@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:~~ | Remuda 100 CTB | Turn Around | |
| Project Number: | 03E1558138 | ☑ Routine ☐ Rush | |
| Project Location: | 32.27708, -103.94295 | Due Date: | |
| Sampler's Name: | Meredith Roberts | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Samples Received Intact: | Yes No | Thermometer ID: | TM-887 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 5.6 |
| Total Containers: | | Corrected Temperature: | 5.4 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | Parameters: Chlorides | BTEX | TPH |
|---|---|---|---|---|---|---|---|---|---|---|
| BH02 | S | 11/22/22 | 1120 | 1' | G | 1 | | X | X | X |

ANALYSIS REQUEST

890-3556 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**

Incident #: nAPP2226346738

Cost Center: 1067621001

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 | 11/22/22 1504 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date: 08/25/2020 Rev 2020.2

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

# Chain of Custody Record

eurofins | Environment Testing

| Client Information (Sub Contract Lab) | Sampler | Lab PM: Kramer Jessica | Carrier Tracking No(s) | COC No: 890-1042 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: Jessica.Kramer@et.eurofinsus.com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Texas | | Job #: 890-3556-1 |
| Address: 1211 W Florida Ave | Due Date Requested: 11/30/2022 | | | |
| City: Midland | TAT Requested (days): | | | |
| State, Zip: TX, 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO #: | | | |
| Email | WO #: | | | |
| Project Name: Remuda 100 CTB | Project #: 89000093 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J - DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8015MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| BH02 (890-3556-1) | 11/22/22 | 11 20 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification: Unconfirmed | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
|---|---|
| Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by: | Date | Time: | Method of Shipment: |
|---|---|---|---|

| | Date/Time | Company | | Date/Time | Company |
|---|---|---|---|---|---|
| Relinquished by: Clue | | | Received by: JKramer | 11/23 1134 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time | Company | Received by: | Date/Time | Company |

| Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks. |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3556-1
SDG Number: 03E1558138

**Login Number: 3556**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3556-1
SDG Number: 03E1558138

**Login Number: 3556**
**List Number: 2**
**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**
**List Creation: 11/23/22 11:47 AM**

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

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/5/2022 1:33:17 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E1558138

## JOB NUMBER

890-3557-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.





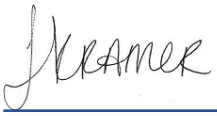
my EOL

# Eurofins Carlsbad

## Job Notes

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

## Authorization



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12/5/2022 1:33:17 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 890-3557-1
SDG: 03E1558138

# Table of Contents

# Definitions/Glossary

Client: Ensolum Job ID: 890-3557-1
Project/Site: Remuda 100 CTB SDG: 03E1558138

## Qualifiers

### GC VOA

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

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| S1+ | Surrogate recovery exceeds control limits, 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: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

## Job ID: 890-3557-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3557-1**

**Receipt**
The sample was received on 11/22/2022 3:00 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-40686/5), (LCS 880-40653/2-A) and (LCSD 880-40653/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-3559-A-23-F). 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: BH01 (890-3557-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-40653 and analytical batch 880-40686 was outside the upper control limits.

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

**HPLC/IC**
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: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

## Client Sample ID: BH01

**Date Collected: 11/22/22 12:05**
**Date Received: 11/22/22 15:00**
**Sample Depth: 1**

## Lab Sample ID: 890-3557-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:31 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:31 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:31 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:31 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:31 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *119* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 18:31* | *1* |
| *1,4-Difluorobenzene (Surr)* | *88* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 18:31* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 12/05/22 14:17 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **60.0** | | 50.0 | | mg/Kg | | | 12/01/22 12:06 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/30/22 08:30 | 12/01/22 00:42 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **60.0** | | 50.0 | | mg/Kg | | 11/30/22 08:30 | 12/01/22 00:42 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/30/22 08:30 | 12/01/22 00:42 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *117* | | *70 - 130* | *11/30/22 08:30* | *12/01/22 00:42* | *1* |
| *o-Terphenyl* | *141* | *S1+* | *70 - 130* | *11/30/22 08:30* | *12/01/22 00:42* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **2420** | | 24.9 | | mg/Kg | | | 11/29/22 13:15 | 5 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

## 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) |
| 890-3549-A-1-C MS | Matrix Spike | 114 | 102 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | 104 | 101 |
| 890-3557-1 | BH01 | 119 | 88 |
| LCS 880-40625/1-A | Lab Control Sample | 105 | 100 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | 104 | 97 |
| MB 880-40625/5-A | Method Blank | 68 S1- | 94 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-3557-1 | BH01 | 117 | 141 S1+ |
| 890-3559-A-23-G MS | Matrix Spike | 121 | 123 |
| 890-3559-A-23-H MSD | Matrix Spike Duplicate | 124 | 126 |
| LCS 880-40653/2-A | Lab Control Sample | 183 S1+ | 217 S1+ |
| LCSD 880-40653/3-A | Lab Control Sample Dup | 170 S1+ | 200 S1+ |
| MB 880-40653/1-A | Method Blank | 116 | 145 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-40625/5-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *68* | *S1-* | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |

**Lab Sample ID: LCS 880-40625/1-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1252 | | mg/Kg | | 125 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1206 | | mg/Kg | | 121 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1093 | | mg/Kg | | 109 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2198 | | mg/Kg | | 110 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40625/2-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1186 | | mg/Kg | | 119 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.1151 | | mg/Kg | | 115 | 70 - 130 | 5 | 35 |
| Ethylbenzene | | | 0.100 | 0.1044 | | mg/Kg | | 104 | 70 - 130 | 5 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2094 | | mg/Kg | | 105 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | 0 | 35 |

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

**Lab Sample ID: 890-3549-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0996 | 0.1021 | | mg/Kg | | 103 | 70 - 130 | | |
| Toluene | <0.00201 | U | 0.0996 | 0.1062 | | mg/Kg | | 107 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

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

**Lab Sample ID: 890-3549-A-1-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40842** — **Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00201 | U | 0.0996 | 0.1009 | | mg/Kg | | 101 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.199 | 0.2022 | | mg/Kg | | 101 | 70 - 130 |
| o-Xylene | <0.00201 | U | 0.0996 | 0.1035 | | mg/Kg | | 104 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 890-3549-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40842** — **Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0990 | 0.09136 | | mg/Kg | | 92 | 70 - 130 | 11 | 35 |
| Toluene | <0.00201 | U | 0.0990 | 0.09165 | | mg/Kg | | 93 | 70 - 130 | 15 | 35 |
| Ethylbenzene | <0.00201 | U | 0.0990 | 0.08677 | | mg/Kg | | 88 | 70 - 130 | 15 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.198 | 0.1732 | | mg/Kg | | 87 | 70 - 130 | 15 | 35 |
| o-Xylene | <0.00201 | U | 0.0990 | 0.08889 | | mg/Kg | | 90 | 70 - 130 | 15 | 35 |

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

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

**Lab Sample ID: MB 880-40653/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40686** — **Prep Batch: 40653**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 11/30/22 08:30 | 11/30/22 14:25 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 11/30/22 08:30 | 11/30/22 14:25 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 11/30/22 08:30 | 11/30/22 14:25 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *116* | | *70 - 130* | *11/30/22 08:30* | *11/30/22 14:25* | *1* |
| *o-Terphenyl* | *145* | *S1+* | *70 - 130* | *11/30/22 08:30* | *11/30/22 14:25* | *1* |

**Lab Sample ID: LCS 880-40653/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40686** — **Prep Batch: 40653**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 1000 | 994.8 | | mg/Kg | | 99 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 1000 | 1096 | | mg/Kg | | 110 | 70 - 130 |

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# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

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

**Lab Sample ID: LCS 880-40653/2-A**
**Matrix: Solid**
**Analysis Batch: 40686**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40653**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 183 | S1+ | 70 - 130 |
| o-Terphenyl | 217 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-40653/3-A**
**Matrix: Solid**
**Analysis Batch: 40686**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40653**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 834.2 | | mg/Kg | | 83 | 70 - 130 | 18 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 993.6 | | mg/Kg | | 99 | 70 - 130 | 10 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 170 | S1+ | 70 - 130 |
| o-Terphenyl | 200 | S1+ | 70 - 130 |

**Lab Sample ID: 890-3559-A-23-G MS**
**Matrix: Solid**
**Analysis Batch: 40686**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40653**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 1262 | | mg/Kg | | 122 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 1256 | | mg/Kg | | 122 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 121 | | 70 - 130 |
| o-Terphenyl | 123 | | 70 - 130 |

**Lab Sample ID: 890-3559-A-23-H MSD**
**Matrix: Solid**
**Analysis Batch: 40686**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 40653**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 997 | 1183 | | mg/Kg | | 114 | 70 - 130 | 6 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 997 | 1325 | | mg/Kg | | 129 | 70 - 130 | 5 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 124 | | 70 - 130 |
| o-Terphenyl | 126 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-40386/1-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 11/29/22 09:19 | 1 |

**Lab Sample ID: LCS 880-40386/2-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 880-40386/3-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 242.0 | | mg/Kg | | 97 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-3551-A-4-A MS**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 299.9 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: 890-3551-A-4-A MSD**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 300.2 | | mg/Kg | | 101 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

## GC VOA

### Prep Batch: 40625

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Total/NA | Solid | 5035 | |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 40842

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Total/NA | Solid | 8021B | 40625 |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 8021B | 40625 |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40625 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 40625 |

### Analysis Batch: 41053

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 40653

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Total/NA | Solid | 8015NM Prep | |
| MB 880-40653/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-40653/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-40653/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-3559-A-23-G MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-3559-A-23-H MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 40686

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Total/NA | Solid | 8015B NM | 40653 |
| MB 880-40653/1-A | Method Blank | Total/NA | Solid | 8015B NM | 40653 |
| LCS 880-40653/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 40653 |
| LCSD 880-40653/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 40653 |
| 890-3559-A-23-G MS | Matrix Spike | Total/NA | Solid | 8015B NM | 40653 |
| 890-3559-A-23-H MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 40653 |

### Analysis Batch: 40779

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 40386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Soluble | Solid | DI Leach | |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

## HPLC/IC (Continued)

### Leach Batch: 40386 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 40550

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Soluble | Solid | 300.0 | 40386 |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | 300.0 | 40386 |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 40386 |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 40386 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

## Client Sample ID: BH01

**Date Collected: 11/22/22 12:05**
**Date Received: 11/22/22 15:00**

## Lab Sample ID: 890-3557-1

**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 | 40625 | 11/29/22 16:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40842 | 12/02/22 18:31 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 41053 | 12/05/22 14:17 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 40779 | 12/01/22 12:06 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 40653 | 11/30/22 08:30 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 40686 | 12/01/22 00:42 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.02 g | 50 mL | 40386 | 11/28/22 08:56 | CH | EET MID |
| Soluble | Analysis | 300.0 | | 5 | | | 40550 | 11/29/22 13:15 | SMC | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

## 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: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3557-1
SDG: 03E1558138

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3557-1 | BH01 | Solid | 11/22/22 12:05 | 11/22/22 15:00 | 1 |

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# Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Ben Belill | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum, LLC | Company Name: | XTO Energy |
| Address: | 3122 Nat'l Parks Hwy | Address: | 3104 E Greene St |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 989.854.0852 Email: | | bbelill@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: | ~~Remediation ERR~~ | Turn Around | |
| Project Number: | 03E155 8138 | ☑ Routine ☐ Rush | |
| Project Location: | 32.27708, 103.94295 | Due Date: | |
| Sampler's Name: | Meredith Roberts | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes (No) | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | IR#07 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 5.6 |
| Total Containers: | | Corrected Temperature: | 5.4 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Pres. Code | BTEX | Chlorides | TPH |
|---|---|---|---|---|---|---|---|---|---|---|
| BH01 | S | 11/22/22 | 1205 | 1' | G | 1 | | X | X | X |

890-3557 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**

Incident #:
nAPP2226346738

Cost Center:
1067621001

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 Brealle | Amanda Stiff | 11/22/22 1504 | 4 | | |
| 3 | | | 6 | | |
| 5 | | | | | |

Revised Date: 08/25/2020 Rev. 2020.2

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

# Chain of Custody Record

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| Client Information (Sub Contract Lab) | Sampler | Lab PM: Kramer Jessica | Carrier Tracking No(s) | COC No: 890-1042 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone | E-Mail: Jessica Kramer@et.eurofinsus com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Texas | | Job #: 890-3557-1 |
| Address: 1211 W Florida Ave | Due Date Requested: 11/30/2022 | | | |
| City: Midland | TAT Requested (days): | | | |
| State Zip: TX 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO #: | | | |
| Email | WO #: | | | |
| Project Name: Remuda 100 CTB | Project #: 89000093 | | | |
| Site | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M - Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8015MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| BH01 (890-3557-1) | 11/22/22 | 12 05 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note: Since laboratory accreditations are subject to change Eurofins Environment Testing South Central, LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification: Unconfirmed | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
|---|---|
| Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by | Date | Time | Method of Shipment: |
|---|---|---|---|

| | Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|---|
| 1 | Clue | | | KRAMER | 11/23 1134 | |
| 2 | Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
| 3 | Relinquished by | Date/Time | Company | Received by | Date/Time: | Company |

| Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks. |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3557-1
SDG Number: 03E1558138

**Login Number: 3557**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3557-1
SDG Number: 03E1558138

**Login Number: 3557**
**List Number: 2**
**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**
**List Creation: 11/23/22 11:47 AM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/5/2022 1:33:32 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E1558138

## JOB NUMBER

890-3558-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.





my EOL

# Eurofins Carlsbad

## Job Notes

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

## Authorization

Generated
12/5/2022 1:33:32 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 890-3558-1
SDG: 03E1558138

# Table of Contents

# Definitions/Glossary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

## Qualifiers

### GC VOA

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

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| S1+ | Surrogate recovery exceeds control limits, 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: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

## Job ID: 890-3558-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3558-1**

**Receipt**
The sample was received on 11/22/2022 3:00 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-40686/5), (LCS 880-40653/2-A) and (LCSD 880-40653/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-3559-A-23-F). 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: BH01A (890-3558-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-40653 and analytical batch 880-40686 was outside the upper control limits.

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

**HPLC/IC**
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: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

## Client Sample ID: BH01A

**Date Collected: 11/22/22 12:10**
**Date Received: 11/22/22 15:00**
**Sample Depth: 2**

## Lab Sample ID: 890-3558-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:57 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:57 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:57 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:57 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:57 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 18:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 18:57* | *1* |
| *1,4-Difluorobenzene (Surr)* | *87* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 18:57* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 12/05/22 14:17 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 12/01/22 12:06 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 11/30/22 08:30 | 12/01/22 01:04 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 11/30/22 08:30 | 12/01/22 01:04 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 11/30/22 08:30 | 12/01/22 01:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *127* | | *70 - 130* | *11/30/22 08:30* | *12/01/22 01:04* | *1* |
| *o-Terphenyl* | *155* | *S1+* | *70 - 130* | *11/30/22 08:30* | *12/01/22 01:04* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1980** | | 24.8 | | mg/Kg | | | 11/29/22 13:23 | 5 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

## 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) |
| 890-3549-A-1-C MS | Matrix Spike | 114 | 102 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | 104 | 101 |
| 890-3558-1 | BH01A | 106 | 87 |
| LCS 880-40625/1-A | Lab Control Sample | 105 | 100 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | 104 | 97 |
| MB 880-40625/5-A | Method Blank | 68 S1- | 94 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-3558-1 | BH01A | 127 | 155 S1+ |
| 890-3559-A-23-G MS | Matrix Spike | 121 | 123 |
| 890-3559-A-23-H MSD | Matrix Spike Duplicate | 124 | 126 |
| LCS 880-40653/2-A | Lab Control Sample | 183 S1+ | 217 S1+ |
| LCSD 880-40653/3-A | Lab Control Sample Dup | 170 S1+ | 200 S1+ |
| MB 880-40653/1-A | Method Blank | 116 | 145 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-40625/5-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 16:02 | 12/02/22 11:45 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *68* | *S1-* | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* | *11/29/22 16:02* | *12/02/22 11:45* | *1* |

**Lab Sample ID: LCS 880-40625/1-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1252 | | mg/Kg | | 125 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1206 | | mg/Kg | | 121 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1093 | | mg/Kg | | 109 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2198 | | mg/Kg | | 110 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40625/2-A**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1186 | | mg/Kg | | 119 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.1151 | | mg/Kg | | 115 | 70 - 130 | 5 | 35 |
| Ethylbenzene | | | 0.100 | 0.1044 | | mg/Kg | | 104 | 70 - 130 | 5 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2094 | | mg/Kg | | 105 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.1069 | | mg/Kg | | 107 | 70 - 130 | 0 | 35 |

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

**Lab Sample ID: 890-3549-A-1-C MS**
**Matrix: Solid**
**Analysis Batch: 40842**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0996 | 0.1021 | | mg/Kg | | 103 | 70 - 130 | | |
| Toluene | <0.00201 | U | 0.0996 | 0.1062 | | mg/Kg | | 107 | 70 - 130 | | |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

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

**Lab Sample ID: 890-3549-A-1-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40842** — **Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00201 | U | 0.0996 | 0.1009 | | mg/Kg | | 101 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.199 | 0.2022 | | mg/Kg | | 101 | 70 - 130 |
| o-Xylene | <0.00201 | U | 0.0996 | 0.1035 | | mg/Kg | | 104 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 890-3549-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40842** — **Prep Batch: 40625**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.0990 | 0.09136 | | mg/Kg | | 92 | 70 - 130 | 11 | 35 |
| Toluene | <0.00201 | U | 0.0990 | 0.09165 | | mg/Kg | | 93 | 70 - 130 | 15 | 35 |
| Ethylbenzene | <0.00201 | U | 0.0990 | 0.08677 | | mg/Kg | | 88 | 70 - 130 | 15 | 35 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.198 | 0.1732 | | mg/Kg | | 87 | 70 - 130 | 15 | 35 |
| o-Xylene | <0.00201 | U | 0.0990 | 0.08889 | | mg/Kg | | 90 | 70 - 130 | 15 | 35 |

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

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

**Lab Sample ID: MB 880-40653/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40686** — **Prep Batch: 40653**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 11/30/22 08:30 | 11/30/22 14:25 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 11/30/22 08:30 | 11/30/22 14:25 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 11/30/22 08:30 | 11/30/22 14:25 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *116* | | *70 - 130* | *11/30/22 08:30* | *11/30/22 14:25* | *1* |
| *o-Terphenyl* | *145* | *S1+* | *70 - 130* | *11/30/22 08:30* | *11/30/22 14:25* | *1* |

**Lab Sample ID: LCS 880-40653/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 40686** — **Prep Batch: 40653**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 1000 | 994.8 | | mg/Kg | | 99 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 1000 | 1096 | | mg/Kg | | 110 | 70 - 130 |

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# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

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

**Lab Sample ID: LCS 880-40653/2-A**
**Matrix: Solid**
**Analysis Batch: 40686**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40653**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 183 | S1+ | 70 - 130 |
| o-Terphenyl | 217 | S1+ | 70 - 130 |

**Lab Sample ID: LCSD 880-40653/3-A**
**Matrix: Solid**
**Analysis Batch: 40686**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40653**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 834.2 | | mg/Kg | | 83 | 70 - 130 | 18 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 993.6 | | mg/Kg | | 99 | 70 - 130 | 10 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 170 | S1+ | 70 - 130 |
| o-Terphenyl | 200 | S1+ | 70 - 130 |

**Lab Sample ID: 890-3559-A-23-G MS**
**Matrix: Solid**
**Analysis Batch: 40686**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 40653**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 1262 | | mg/Kg | | 122 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 999 | 1256 | | mg/Kg | | 122 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 121 | | 70 - 130 |
| o-Terphenyl | 123 | | 70 - 130 |

**Lab Sample ID: 890-3559-A-23-H MSD**
**Matrix: Solid**
**Analysis Batch: 40686**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 40653**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 997 | 1183 | | mg/Kg | | 114 | 70 - 130 | 6 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 997 | 1325 | | mg/Kg | | 129 | 70 - 130 | 5 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 124 | | 70 - 130 |
| o-Terphenyl | 126 | | 70 - 130 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-40386/1-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 11/29/22 09:19 | 1 |

**Lab Sample ID: LCS 880-40386/2-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 880-40386/3-A**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 242.0 | | mg/Kg | | 97 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-3551-A-4-A MS**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 299.9 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: 890-3551-A-4-A MSD**
**Matrix: Solid**
**Analysis Batch: 40550**

**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 | 48.9 | | 249 | 300.2 | | mg/Kg | | 101 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

## GC VOA

### Prep Batch: 40625

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Total/NA | Solid | 5035 | |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 40842

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Total/NA | Solid | 8021B | 40625 |
| MB 880-40625/5-A | Method Blank | Total/NA | Solid | 8021B | 40625 |
| LCS 880-40625/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40625 |
| LCSD 880-40625/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-C MS | Matrix Spike | Total/NA | Solid | 8021B | 40625 |
| 890-3549-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 40625 |

### Analysis Batch: 41054

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 40653

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Total/NA | Solid | 8015NM Prep | |
| MB 880-40653/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-40653/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-40653/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-3559-A-23-G MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-3559-A-23-H MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 40686

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Total/NA | Solid | 8015B NM | 40653 |
| MB 880-40653/1-A | Method Blank | Total/NA | Solid | 8015B NM | 40653 |
| LCS 880-40653/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 40653 |
| LCSD 880-40653/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 40653 |
| 890-3559-A-23-G MS | Matrix Spike | Total/NA | Solid | 8015B NM | 40653 |
| 890-3559-A-23-H MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 40653 |

### Analysis Batch: 40780

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 40386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Soluble | Solid | DI Leach | |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

## HPLC/IC (Continued)

### Leach Batch: 40386 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 40550

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Soluble | Solid | 300.0 | 40386 |
| MB 880-40386/1-A | Method Blank | Soluble | Solid | 300.0 | 40386 |
| LCS 880-40386/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 40386 |
| LCSD 880-40386/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MS | Matrix Spike | Soluble | Solid | 300.0 | 40386 |
| 890-3551-A-4-A MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 40386 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

**Client Sample ID: BH01A**
**Date Collected: 11/22/22 12:10**
**Date Received: 11/22/22 15:00**

**Lab Sample ID: 890-3558-1**
**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 | 40625 | 11/29/22 16:02 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40842 | 12/02/22 18:57 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 41054 | 12/05/22 14:17 | AJ | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 40780 | 12/01/22 12:06 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 40653 | 11/30/22 08:30 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 40686 | 12/01/22 01:04 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.04 g | 50 mL | 40386 | 11/28/22 08:56 | CH | EET MID |
| Soluble | Analysis | 300.0 | | 5 | | | 40550 | 11/29/22 13:23 | SMC | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

## 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: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 890-3558-1
SDG: 03E1558138

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3558-1 | BH01A | Solid | 11/22/22 12:10 | 11/22/22 15:00 | 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: | Ben Belill | Bill to: (if different) | Garrett Green |
| Company Name: | Ensolum, LLC | Company Name: | XTO Energy |
| Address: | 3122 Nat'l Parks Hwy | Address: | 3104 E Greene St |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 989-854-0852 | Email: | bbelill@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: | Remuda 100 CTB | Turn Around | |
| Project Number: | 03E1558138 | ☑ Routine ☐ Rush | |
| Project Location: | 32.27708, -103.94295 | Due Date: | |
| Sampler's Name: | Meredith Roberts | TAT starts the day received by the lab, if received by 4:30pm | |
| PO #: | | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Samples Received Intact: | Yes No | Thermometer ID: | TDM 007 |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Temperature Reading: | 5.6 |
| Total Containers: | | Corrected Temperature: | 5.4 |

ANALYSIS REQUEST

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Chlorides | BTEX | TPH |
|---|---|---|---|---|---|---|---|---|---|
| ~~BH01~~ BH01A | S | 11/22/22 | 1210 | 2' | G | 1 | X | X | X |

890-3558 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**

Incident #: nAPP2226346738

Cost Center: 1067621001

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 Meredith | Amanda Lopez | 11/22/22 1504 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

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

# Chain of Custody Record

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| Client Information (Sub Contract Lab) | Sampler | Lab PM: Kramer Jessica | Carrier Tracking No(s) | COC No: 890-1042 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone | E-Mail: Jessica Kramer@et.eurofinsus com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Texas | | Job #: 890-3558-1 |
| Address: 1211 W Florida Ave | Due Date Requested: 11/30/2022 | | | |
| City: Midland | TAT Requested (days) | | | |
| State Zip: TX 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO # | | | |
| Email | WO #: | | | |
| Project Name: Remuda 100 CTB | Project #: 89000093 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G - Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8015MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| BH01A (890-3558-1) | 11/22/22 | 12 10 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note Since laboratory accreditations are subject to change Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification: Unconfirmed | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
|---|---|
| Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by | Date | Time | Method of Shipment: |
|---|---|---|---|

| | Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|---|
| 1 | Clee | | | Kramer | 11/23 1134 | |
| 2 | | | | | | |
| 3 | | | | | | |

| Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks. |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3558-1
SDG Number: 03E1558138

**Login Number: 3558**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3558-1
SDG Number: 03E1558138

**Login Number: 3558**
**List Number: 2**
**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**
**List Creation: 11/23/22 11:47 AM**

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

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/9/2022 4:42:47 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E1558138

## JOB NUMBER

880-22253-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.





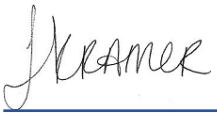
my EOL

# Eurofins Midland

## Job Notes

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

## Authorization



Generated
12/9/2022 4:42:47 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 880-22253-1
SDG: 03E1558138

# Table of Contents

# Definitions/Glossary

Client: Ensolum Job ID: 880-22253-1
Project/Site: Remuda 100 CTB SDG: 03E1558138

## Qualifiers

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| 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: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

## Job ID: 880-22253-1

**Laboratory: Eurofins Midland**

**Narrative**

**Job Narrative**
**880-22253-1**

**Receipt**
The sample was received on 12/2/2022 2:37 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice.

**GC VOA**
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: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

## Client Sample ID: SS06

**Date Collected: 12/02/22 13:30**
**Date Received: 12/02/22 14:37**
**Sample Depth: 0.5'**

## Lab Sample ID: 880-22253-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 18:39 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 18:39 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 18:39 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 18:39 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 18:39 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 18:39 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *95* | | *70 - 130* | *12/07/22 09:16* | *12/07/22 18:39* | *1* |
| *1,4-Difluorobenzene (Surr)* | *83* | | *70 - 130* | *12/07/22 09:16* | *12/07/22 18:39* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 12/08/22 09:37 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 12/08/22 10:05 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 12/06/22 15:09 | 12/07/22 19:04 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 12/06/22 15:09 | 12/07/22 19:04 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 12/06/22 15:09 | 12/07/22 19:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *123* | | *70 - 130* | *12/06/22 15:09* | *12/07/22 19:04* | *1* |
| *o-Terphenyl* | *130* | | *70 - 130* | *12/06/22 15:09* | *12/07/22 19:04* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **22.0** | | 5.05 | | mg/Kg | | | 12/09/22 15:47 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

## 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) |
| 880-22253-1 | SS06 | 95 | 83 |
| 880-22352-A-1-D MS | Matrix Spike | 102 | 114 |
| 880-22352-A-1-E MSD | Matrix Spike Duplicate | 102 | 119 |
| LCS 880-40641/1-A | Lab Control Sample | 97 | 111 |
| LCSD 880-40641/2-A | Lab Control Sample Dup | 96 | 116 |
| MB 880-40641/5-A | Method Blank | 82 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-22122-A-41-C MS | Matrix Spike | 95 | 86 |
| 880-22122-A-41-D MSD | Matrix Spike Duplicate | 99 | 90 |
| 880-22253-1 | SS06 | 123 | 130 |
| LCS 880-41188/2-A | Lab Control Sample | 99 | 97 |
| LCSD 880-41188/3-A | Lab Control Sample Dup | 92 | 90 |
| MB 880-41188/1-A | Method Blank | 96 | 105 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-40641/5-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *82* | | *70 - 130* | *11/29/22 09:16* | *12/07/22 11:40* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *11/29/22 09:16* | *12/07/22 11:40* | *1* |

**Lab Sample ID: LCS 880-40641/1-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09342 | | mg/Kg | | 93 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08359 | | mg/Kg | | 84 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.07983 | | mg/Kg | | 80 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1630 | | mg/Kg | | 82 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08217 | | mg/Kg | | 82 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40641/2-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1165 | | mg/Kg | | 117 | 70 - 130 | 22 | 35 |
| Toluene | | | 0.100 | 0.09996 | | mg/Kg | | 100 | 70 - 130 | 18 | 35 |
| Ethylbenzene | | | 0.100 | 0.09697 | | mg/Kg | | 97 | 70 - 130 | 19 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1952 | | mg/Kg | | 98 | 70 - 130 | 18 | 35 |
| o-Xylene | | | 0.100 | 0.09498 | | mg/Kg | | 95 | 70 - 130 | 14 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *116* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-41188/1-A**
**Matrix: Solid**
**Analysis Batch: 41213**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 41188**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/06/22 15:09 | 12/07/22 08:36 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/06/22 15:09 | 12/07/22 08:36 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/06/22 15:09 | 12/07/22 08:36 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *96* | | *70 - 130* | *12/06/22 15:09* | *12/07/22 08:36* | *1* |
| *o-Terphenyl* | *105* | | *70 - 130* | *12/06/22 15:09* | *12/07/22 08:36* | *1* |

**Lab Sample ID: LCS 880-41188/2-A**
**Matrix: Solid**
**Analysis Batch: 41213**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 41188**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 854.5 | | mg/Kg | | 85 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 798.7 | | mg/Kg | | 80 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *99* | | *70 - 130* |
| *o-Terphenyl* | *97* | | *70 - 130* |

**Lab Sample ID: LCSD 880-41188/3-A**
**Matrix: Solid**
**Analysis Batch: 41213**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 41188**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 874.7 | | mg/Kg | | 87 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 810.6 | | mg/Kg | | 81 | 70 - 130 | 1 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *92* | | *70 - 130* |
| *o-Terphenyl* | *90* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-40994/1-A**
**Matrix: Solid**
**Analysis Batch: 41276**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/09/22 11:10 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

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

**Lab Sample ID: LCS 880-40994/2-A**
**Matrix: Solid**
**Analysis Batch: 41276**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 250 | 262.5 | | mg/Kg | | 105 | 90 - 110 |

**Lab Sample ID: LCSD 880-40994/3-A**
**Matrix: Solid**
**Analysis Batch: 41276**

**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 | 263.2 | | mg/Kg | | 105 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

## GC VOA

### Prep Batch: 40641

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Total/NA | Solid | 5035 | |
| MB 880-40641/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40641/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40641/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |

### Analysis Batch: 41222

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Total/NA | Solid | 8021B | 40641 |
| MB 880-40641/5-A | Method Blank | Total/NA | Solid | 8021B | 40641 |
| LCS 880-40641/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40641 |
| LCSD 880-40641/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40641 |

### Analysis Batch: 41327

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 41188

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Total/NA | Solid | 8015NM Prep | |
| MB 880-41188/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-41188/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-41188/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 41213

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Total/NA | Solid | 8015B NM | 41188 |
| MB 880-41188/1-A | Method Blank | Total/NA | Solid | 8015B NM | 41188 |
| LCS 880-41188/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 41188 |
| LCSD 880-41188/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 41188 |

### Analysis Batch: 41342

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 40994

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Soluble | Solid | DI Leach | |
| MB 880-40994/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-40994/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-40994/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

### Analysis Batch: 41276

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Soluble | Solid | 300.0 | 40994 |
| MB 880-40994/1-A | Method Blank | Soluble | Solid | 300.0 | 40994 |
| LCS 880-40994/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 40994 |
| LCSD 880-40994/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 40994 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

## Client Sample ID: SS06

**Date Collected: 12/02/22 13:30**
**Date Received: 12/02/22 14:37**

## Lab Sample ID: 880-22253-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 40641 | MNR | EET MID | 12/07/22 09:16 |
| Total/NA | Analysis | 8021B | | 1 | 41222 | MNR | EET MID | 12/07/22 18:39 |
| Total/NA | Analysis | Total BTEX | | 1 | 41327 | SM | EET MID | 12/08/22 09:37 |
| Total/NA | Analysis | 8015 NM | | 1 | 41342 | SM | EET MID | 12/08/22 10:05 |
| Total/NA | Prep | 8015NM Prep | | | 41188 | DM | EET MID | 12/06/22 15:09 |
| Total/NA | Analysis | 8015B NM | | 1 | 41213 | SM | EET MID | 12/07/22 19:04 |
| Soluble | Leach | DI Leach | | | 40994 | SMC | EET MID | 12/05/22 09:48 |
| Soluble | Analysis | 300.0 | | 1 | 41276 | CH | EET MID | 12/09/22 15:47 |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

## 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: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22253-1
SDG: 03E1558138

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 880-22253-1 | SS06 | Solid | 12/02/22 13:30 | 12/02/22 14:37 | 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: 22253

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

| | | | |
|---|---|---|---|
| Project Name | Remuda DD CTB | Turn Around | |
| Project Number | 03E1558138 | Routine / Rush | |
| Project Location | 32.27708, -103.94295 | Due Date | |
| Sampler's Name | Meredith Roberts | TAT starts the day received by the lab, if received by 4:30pm | |
| PO # | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank. | Yes No | Wet Ice | Yes No | |
| Samples Received Intact: | Yes No | Thermometer ID | T-NM-007 | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor | | |
| Sample Custody Seals | Yes No N/A | Temperature Reading | 2.8 | |
| Total Containers: | | Corrected Temperature | | |

**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:

**Preservative Codes**

None NO DI Water $H_2O$
Cool Cool MeOH Me
HCL HC $HNO_3$ HN
H Na

880-22253 Chain of Custody

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Chlorides | TPH | BTEX |
|---|---|---|---|---|---|---|---|---|---|
| SS06 | S | 12/02/22 | 1330 | 0.5' | G | 1 | X | X | X |

Sample Comments

Incident #: nAPP2226346738

Cost Center: 1067621001

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 | | 12-2-22 14:37 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 880-22253-1
SDG Number: 03E1558138

**Login Number: 22253**
**List Number: 1**
**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**

| 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. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/9/2022 7:47:58 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E1558138

## JOB NUMBER

880-22254-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

# Eurofins Midland

## Job Notes

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

## Authorization

Generated
12/9/2022 7:47:58 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 880-22254-1
SDG: 03E1558138

# Table of Contents

# Definitions/Glossary

Client: Ensolum Job ID: 880-22254-1
Project/Site: Remuda 100 CTB SDG: 03E1558138

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

## Job ID: 880-22254-1

**Laboratory: Eurofins Midland**

**Narrative**

**Job Narrative**
**880-22254-1**

**Receipt**
The sample was received on 12/2/2022 2:37 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice.

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-41297/1-A). Evidence of matrix interferences is not obvious.

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

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

# Client Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

## Client Sample ID: SS03

**Date Collected: 12/02/22 14:37**
**Date Received: 12/02/22 14:37**

## Lab Sample ID: 880-22254-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:00 | 1 |
| Toluene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:00 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:00 | 1 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.00403 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:00 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:00 | 1 |
| Xylenes, Total | <0.00403 | U | 0.00403 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:00 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *87* | | *70 - 130* | *12/07/22 09:16* | *12/07/22 19:00* | *1* |
| *1,4-Difluorobenzene (Surr)* | *82* | | *70 - 130* | *12/07/22 09:16* | *12/07/22 19:00* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00403 | U | 0.00403 | | mg/Kg | | | 12/08/22 09:37 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 12/09/22 20:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 19:40 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 19:40 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 19:40 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *103* | | *70 - 130* | *12/07/22 15:29* | *12/09/22 19:40* | *1* |
| *o-Terphenyl* | *105* | | *70 - 130* | *12/07/22 15:29* | *12/09/22 19:40* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **11.5** | | 5.04 | | mg/Kg | | | 12/09/22 15:54 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

## 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) |
| 880-22254-1 | SS03 | 87 | 82 |
| 880-22352-A-1-D MS | Matrix Spike | 102 | 114 |
| 880-22352-A-1-E MSD | Matrix Spike Duplicate | 102 | 119 |
| LCS 880-40641/1-A | Lab Control Sample | 97 | 111 |
| LCSD 880-40641/2-A | Lab Control Sample Dup | 96 | 116 |
| MB 880-40641/5-A | Method Blank | 82 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-22249-A-1-C MS | Matrix Spike | 92 | 89 |
| 880-22249-A-1-D MSD | Matrix Spike Duplicate | 94 | 89 |
| 880-22254-1 | SS03 | 103 | 105 |
| LCS 880-41297/2-A | Lab Control Sample | 92 | 95 |
| LCSD 880-41297/3-A | Lab Control Sample Dup | 88 | 91 |
| MB 880-41297/1-A | Method Blank | 102 | 140 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-40641/5-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *82* | | *70 - 130* | *11/29/22 09:16* | *12/07/22 11:40* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *11/29/22 09:16* | *12/07/22 11:40* | *1* |

**Lab Sample ID: LCS 880-40641/1-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09342 | | mg/Kg | | 93 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08359 | | mg/Kg | | 84 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.07983 | | mg/Kg | | 80 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1630 | | mg/Kg | | 82 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08217 | | mg/Kg | | 82 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40641/2-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1165 | | mg/Kg | | 117 | 70 - 130 | 22 | 35 |
| Toluene | | | 0.100 | 0.09996 | | mg/Kg | | 100 | 70 - 130 | 18 | 35 |
| Ethylbenzene | | | 0.100 | 0.09697 | | mg/Kg | | 97 | 70 - 130 | 19 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1952 | | mg/Kg | | 98 | 70 - 130 | 18 | 35 |
| o-Xylene | | | 0.100 | 0.09498 | | mg/Kg | | 95 | 70 - 130 | 14 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *116* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

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

**Lab Sample ID: MB 880-41297/1-A**
**Matrix: Solid**
**Analysis Batch: 41416**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 41297**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 09:49 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 09:49 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 09:49 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *102* | | *70 - 130* | *12/07/22 15:29* | *12/09/22 09:49* | *1* |
| *o-Terphenyl* | *140* | *S1+* | *70 - 130* | *12/07/22 15:29* | *12/09/22 09:49* | *1* |

**Lab Sample ID: LCS 880-41297/2-A**
**Matrix: Solid**
**Analysis Batch: 41416**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 41297**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 890.6 | | mg/Kg | | 89 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 865.8 | | mg/Kg | | 87 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *92* | | *70 - 130* |
| *o-Terphenyl* | *95* | | *70 - 130* |

**Lab Sample ID: LCSD 880-41297/3-A**
**Matrix: Solid**
**Analysis Batch: 41416**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 41297**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 837.9 | | mg/Kg | | 84 | 70 - 130 | 6 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 863.4 | | mg/Kg | | 86 | 70 - 130 | 0 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *88* | | *70 - 130* |
| *o-Terphenyl* | *91* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-40994/1-A**
**Matrix: Solid**
**Analysis Batch: 41276**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/09/22 11:10 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

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

**Lab Sample ID: LCS 880-40994/2-A**
**Matrix: Solid**
**Analysis Batch: 41276**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 250 | 262.5 | | mg/Kg | | 105 | 90 - 110 |

**Lab Sample ID: LCSD 880-40994/3-A**
**Matrix: Solid**
**Analysis Batch: 41276**

**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 | 263.2 | | mg/Kg | | 105 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

## GC VOA

### Prep Batch: 40641

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22254-1 | SS03 | Total/NA | Solid | 5035 | |
| MB 880-40641/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40641/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40641/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |

### Analysis Batch: 41222

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22254-1 | SS03 | Total/NA | Solid | 8021B | 40641 |
| MB 880-40641/5-A | Method Blank | Total/NA | Solid | 8021B | 40641 |
| LCS 880-40641/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40641 |
| LCSD 880-40641/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40641 |

### Analysis Batch: 41328

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22254-1 | SS03 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 41297

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22254-1 | SS03 | Total/NA | Solid | 8015NM Prep | |
| MB 880-41297/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-41297/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-41297/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 41416

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22254-1 | SS03 | Total/NA | Solid | 8015B NM | 41297 |
| MB 880-41297/1-A | Method Blank | Total/NA | Solid | 8015B NM | 41297 |
| LCS 880-41297/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 41297 |
| LCSD 880-41297/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 41297 |

### Analysis Batch: 41509

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22254-1 | SS03 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 40994

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22254-1 | SS03 | Soluble | Solid | DI Leach | |
| MB 880-40994/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-40994/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-40994/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

### Analysis Batch: 41276

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22254-1 | SS03 | Soluble | Solid | 300.0 | 40994 |
| MB 880-40994/1-A | Method Blank | Soluble | Solid | 300.0 | 40994 |
| LCS 880-40994/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 40994 |
| LCSD 880-40994/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 40994 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

**Client Sample ID: SS03**
**Date Collected: 12/02/22 14:37**
**Date Received: 12/02/22 14:37**

**Lab Sample ID: 880-22254-1**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 40641 | MNR | EET MID | 12/07/22 09:16 |
| Total/NA | Analysis | 8021B | | 1 | 41222 | MNR | EET MID | 12/07/22 19:00 |
| Total/NA | Analysis | Total BTEX | | 1 | 41328 | SM | EET MID | 12/08/22 09:37 |
| Total/NA | Analysis | 8015 NM | | 1 | 41509 | AJ | EET MID | 12/09/22 20:41 |
| Total/NA | Prep | 8015NM Prep | | | 41297 | DM | EET MID | 12/07/22 15:29 |
| Total/NA | Analysis | 8015B NM | | 1 | 41416 | AJ | EET MID | 12/09/22 19:40 |
| Soluble | Leach | DI Leach | | | 40994 | SMC | EET MID | 12/05/22 09:48 |
| Soluble | Analysis | 300.0 | | 1 | 41276 | CH | EET MID | 12/09/22 15:54 |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

## 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: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22254-1
SDG: 03E1558138

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 880-22254-1 | SS03 | Solid | 12/02/22 14:37 | 12/02/22 14:37 |

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: 22254

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| | | | |
|---|---|---|---|
| Project Manager: | Ben Bellil | Bill to (if different) | Garrett Green |
| Company Name: | Ensolum, LLC | Company Name | XTO Energy |
| Address: | 3122 Nat'l Parks Hwy | Address | 3104 E Greene St |
| City State ZIP | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone | 989 854-0852 Email | | bbellil@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: | Remuda 100 CTB | Turn Around | |
| Project Number: | 03E155@138 | ☑ Routine ☐ Rush | |
| Project Location | 32.27708, -103.94295 | Due Date: | |
| Sampler's Name: | Meredith Roberts | TAT starts the day received by the lab, if received by 4:30pm | |
| PO # | | | |

| SAMPLE RECEIPT | Temp Blank | Yes No | Wet Ice | Yes No |
|---|---|---|---|---|
| Samples Received Intact: | Yes No | Thermometer ID | | T-NM-007 |
| Cooler Custody Seals. | Yes No N/A | Correction Factor: | | |
| Sample Custody Seals. | Yes No N/A | Temperature Reading | | 2.8 |
| Total Containers. | | Corrected Temperature: | | |

**Preservative Codes**

None NO DI Water $H_2O$
Zn Acetate+NaOH Zn
NaOH+Ascorbic Acid SAPC

880-22254 Chain of Custody

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Chlorides | BTEX | TPH | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| SS03 | S | 140422 | 1320 | 0.5' | G | 1 | X | X | X | Incident #: nAPP2226346738 |
| | | | | | | | | | | Cost Center: 106762100I |

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 | | | 12.2.22 14:37 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 880-22254-1
SDG Number: 03E1558138

**Login Number: 22254**
**List Number: 1**
**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**

| 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. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/9/2022 7:47:58 PM

## JOB DESCRIPTION

Remuda 100 CTB
SDG NUMBER 03E15581358

## JOB NUMBER

880-22255-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.





my EOL

# Eurofins Midland

## Job Notes

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

## Authorization

Generated
12/9/2022 7:47:58 PM

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

Client: Ensolum
Project/Site: Remuda 100 CTB

Laboratory Job ID: 880-22255-1
SDG: 03E15581358

# Table of Contents





Eurofins Midland
12/9/2022

# Definitions/Glossary

Client: Ensolum Job ID: 880-22255-1
Project/Site: Remuda 100 CTB SDG: 03E15581358

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

## Job ID: 880-22255-1

**Laboratory: Eurofins Midland**

**Narrative**

**Job Narrative**
**880-22255-1**

**Receipt**
The sample was received on 12/2/2022 2:37 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice.

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

**GC Semi VOA**
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-41297/1-A). Evidence of matrix interferences is not obvious.

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

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

# Client Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

## Client Sample ID: SS05

**Date Collected: 12/02/22 13:25**
**Date Received: 12/02/22 14:37**

## Lab Sample ID: 880-22255-1

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:20 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:20 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:20 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:20 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:20 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 12/07/22 09:16 | 12/07/22 19:20 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* | *12/07/22 09:16* | *12/07/22 19:20* | *1* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* | *12/07/22 09:16* | *12/07/22 19:20* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 12/08/22 09:37 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 12/09/22 20:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 20:00 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 20:00 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 20:00 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *103* | | *70 - 130* | *12/07/22 15:29* | *12/09/22 20:00* | *1* |
| *o-Terphenyl* | *107* | | *70 - 130* | *12/07/22 15:29* | *12/09/22 20:00* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **21.6** | | 5.02 | | mg/Kg | | | 12/09/22 16:01 | 1 |

# Surrogate Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

## 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) |
| 880-22255-1 | SS05 | 102 | 103 |
| 880-22352-A-1-D MS | Matrix Spike | 102 | 114 |
| 880-22352-A-1-E MSD | Matrix Spike Duplicate | 102 | 119 |
| LCS 880-40641/1-A | Lab Control Sample | 97 | 111 |
| LCSD 880-40641/2-A | Lab Control Sample Dup | 96 | 116 |
| MB 880-40641/5-A | Method Blank | 82 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-22249-A-1-C MS | Matrix Spike | 92 | 89 |
| 880-22249-A-1-D MSD | Matrix Spike Duplicate | 94 | 89 |
| 880-22255-1 | SS05 | 103 | 107 |
| LCS 880-41297/2-A | Lab Control Sample | 92 | 95 |
| LCSD 880-41297/3-A | Lab Control Sample Dup | 88 | 91 |
| MB 880-41297/1-A | Method Blank | 102 | 140 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

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

**Lab Sample ID: MB 880-40641/5-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/29/22 09:16 | 12/07/22 11:40 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *82* | | *70 - 130* | *11/29/22 09:16* | *12/07/22 11:40* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *11/29/22 09:16* | *12/07/22 11:40* | *1* |

**Lab Sample ID: LCS 880-40641/1-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09342 | | mg/Kg | | 93 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08359 | | mg/Kg | | 84 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.07983 | | mg/Kg | | 80 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1630 | | mg/Kg | | 82 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08217 | | mg/Kg | | 82 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* |

**Lab Sample ID: LCSD 880-40641/2-A**
**Matrix: Solid**
**Analysis Batch: 41222**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 40641**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1165 | | mg/Kg | | 117 | 70 - 130 | 22 | 35 |
| Toluene | | | 0.100 | 0.09996 | | mg/Kg | | 100 | 70 - 130 | 18 | 35 |
| Ethylbenzene | | | 0.100 | 0.09697 | | mg/Kg | | 97 | 70 - 130 | 19 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1952 | | mg/Kg | | 98 | 70 - 130 | 18 | 35 |
| o-Xylene | | | 0.100 | 0.09498 | | mg/Kg | | 95 | 70 - 130 | 14 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *116* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

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

**Lab Sample ID: MB 880-41297/1-A**
**Matrix: Solid**
**Analysis Batch: 41416**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 41297**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 09:49 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 09:49 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/07/22 15:29 | 12/09/22 09:49 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *102* | | *70 - 130* | *12/07/22 15:29* | *12/09/22 09:49* | *1* |
| *o-Terphenyl* | *140* | *S1+* | *70 - 130* | *12/07/22 15:29* | *12/09/22 09:49* | *1* |

**Lab Sample ID: LCS 880-41297/2-A**
**Matrix: Solid**
**Analysis Batch: 41416**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 41297**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 890.6 | | mg/Kg | | 89 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 865.8 | | mg/Kg | | 87 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *92* | | *70 - 130* |
| *o-Terphenyl* | *95* | | *70 - 130* |

**Lab Sample ID: LCSD 880-41297/3-A**
**Matrix: Solid**
**Analysis Batch: 41416**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 41297**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 837.9 | | mg/Kg | | 84 | 70 - 130 | 6 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 863.4 | | mg/Kg | | 86 | 70 - 130 | 0 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *88* | | *70 - 130* |
| *o-Terphenyl* | *91* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-40994/1-A**
**Matrix: Solid**
**Analysis Batch: 41276**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/09/22 11:10 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

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

**Lab Sample ID: LCS 880-40994/2-A**
**Matrix: Solid**
**Analysis Batch: 41276**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 250 | 262.5 | | mg/Kg | | 105 | 90 - 110 |

**Lab Sample ID: LCSD 880-40994/3-A**
**Matrix: Solid**
**Analysis Batch: 41276**

**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 | 263.2 | | mg/Kg | | 105 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

## GC VOA

### Prep Batch: 40641

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22255-1 | SS05 | Total/NA | Solid | 5035 | |
| MB 880-40641/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-40641/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-40641/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |

### Analysis Batch: 41222

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22255-1 | SS05 | Total/NA | Solid | 8021B | 40641 |
| MB 880-40641/5-A | Method Blank | Total/NA | Solid | 8021B | 40641 |
| LCS 880-40641/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 40641 |
| LCSD 880-40641/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 40641 |

### Analysis Batch: 41329

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22255-1 | SS05 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 41297

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22255-1 | SS05 | Total/NA | Solid | 8015NM Prep | |
| MB 880-41297/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-41297/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-41297/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 41416

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22255-1 | SS05 | Total/NA | Solid | 8015B NM | 41297 |
| MB 880-41297/1-A | Method Blank | Total/NA | Solid | 8015B NM | 41297 |
| LCS 880-41297/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 41297 |
| LCSD 880-41297/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 41297 |

### Analysis Batch: 41510

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22255-1 | SS05 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 40994

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22255-1 | SS05 | Soluble | Solid | DI Leach | |
| MB 880-40994/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-40994/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-40994/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

### Analysis Batch: 41276

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-22255-1 | SS05 | Soluble | Solid | 300.0 | 40994 |
| MB 880-40994/1-A | Method Blank | Soluble | Solid | 300.0 | 40994 |
| LCS 880-40994/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 40994 |
| LCSD 880-40994/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 40994 |

# Lab Chronicle

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

## Client Sample ID: SS05

**Date Collected: 12/02/22 13:25**
**Date Received: 12/02/22 14:37**

## Lab Sample ID: 880-22255-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 40641 | MNR | EET MID | 12/07/22 09:16 |
| Total/NA | Analysis | 8021B | | 1 | 41222 | MNR | EET MID | 12/07/22 19:20 |
| Total/NA | Analysis | Total BTEX | | 1 | 41329 | SM | EET MID | 12/08/22 09:37 |
| Total/NA | Analysis | 8015 NM | | 1 | 41510 | AJ | EET MID | 12/09/22 20:41 |
| Total/NA | Prep | 8015NM Prep | | | 41297 | DM | EET MID | 12/07/22 15:29 |
| Total/NA | Analysis | 8015B NM | | 1 | 41416 | AJ | EET MID | 12/09/22 20:00 |
| Soluble | Leach | DI Leach | | | 40994 | SMC | EET MID | 12/05/22 09:48 |
| Soluble | Analysis | 300.0 | | 1 | 41276 | CH | EET MID | 12/09/22 16:01 |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

## 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: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Remuda 100 CTB

Job ID: 880-22255-1
SDG: 03E15581358

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 880-22255-1 | SS05 | Solid | 12/02/22 13:25 | 12/02/22 14:37 |

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: 22755

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Ben Belill | Bill to (if different) | Garrett Green |
| Company Name | Ensolum, LLC | Company Name | XTO Energy |
| Address: | 3122 Nat'l Parks Hwy | Address: | 3104 E Greene St |
| City State ZIP: | Carlsbad, NM 88220 | City State ZIP: | Carlsbad, NM 88220 |
| Phone | 989.854 0852 Email | | bbelill@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: | Remuda 100 CTB | Turn Around | |
| Project Number: | 03E1558138 | ☑ Routine ☐ Rush | |
| Project Location | 32.27708, -103 94295 | Due Date | |
| Sampler's Name: | Meredith Roberts | TAT starts the day received by the lab if received by 4.30pm | |
| PO # | | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank. | Yes No | Wet Ice: | (Yes) No | |
| Samples Received Intact: | Yes No | Thermometer ID | T.NM.007 | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | | |
| Sample Custody Seals | Yes No N/A | Temperature Reading | 2.8 | |
| Total Containers. | | Corrected Temperature: | | |

ANALYSIS REQUEST

Preservative Codes
None NO DI Water $H_2O$
Cool Cool MeOH Me
$HNO_3$ HN
HCl HCl H Na
NaOH+Ascorbic Acid SAPC

880-22255 Chain of Custody

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | Chlorides | BTEX | TPH | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| SS05 | S | 12/04/22 | 1325 | 0.5' | G | 1 | X | X | X | Incident #: nAPP2226346738 |
| | | | | | | | | | over | |
| | | | | | | | | | | Cost Center: 1067621001 |

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 | | | 12.2.22 14:37 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date: 08/25/2020 Rev 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 880-22255-1
SDG Number: 03E15581358

**Login Number: 22255**
**List Number: 1**
**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**

| 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. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |

ENSOLUM

# APPENDIX E

## NMOCD Notifications

**From:** Green, Garrett J
**To:** Tacoma Morrissey
**Subject:** FW: XTO - Sampling Notification (Week of 11/21/22 - 11/25/22)
**Date:** Friday, November 18, 2022 3:38:40 PM

[ **EXTERNAL EMAIL**]

**From:** Green, Garrett J
**Sent:** Friday, November 18, 2022 8:52 AM
**To:** 'ocd.enviro@emnrd.nm.gov' <ocd.enviro@emnrd.nm.gov>; 'Bratcher, Michael, EMNRD' <mike.bratcher@emnrd.nm.gov>; 'Hamlet, Robert, EMNRD' <Robert.Hamlet@emnrd.nm.gov>; 'Harimon, Jocelyn, EMNRD' <Jocelyn.Harimon@emnrd.nm.gov>
**Cc:** DelawareSpills /SM <DelawareSpills@exxonmobil.com>
**Subject:** XTO - Sampling Notification (Week of 11/21/22 - 11/25/22)

All,

XTO plans to complete final sampling activities at the following sites the week of Nov 21, 2022.

- JRU 17 CTB/ nAPP2226628060
- BEU 158 / nAPP2230548752
- Ross Draw 2531 TB FIRE/ nAPP2226646920
- Remuda 100 CTB / nAPP2226346738
- West Brushy Fed 33 1H/ nAPP2228753314
- Ross Draw 3031/ nAPP2227244441

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

## Micro-Blaze Safety Data Sheet

# Safety Data Sheet
# Micro-Blaze® Emergency Liquid Spill Control

## 1. IDENTIFICATION OF THE SUBSTANCE

**Product identifier**

| | |
|---|---|
| Product Name: | Micro-Blaze® Emergency Liquid Spill Control |
| Product Code: | MBELSC |

**Recommended use of the chemical and restrictions on use**

| | |
|---|---|
| Recommended Use: | Bioremediation/cleaning |
| Uses advised against: | Please refer to Product Data Sheet |

**Details of the supplier of the Safety Data Sheet**

| | |
|---|---|
| Contact Manufacturer: | Verde Environmental, Inc.<br>9223 Eastex Freeway<br>Houston, TX USA 77093 |
| Information Telephone Number: | 1-713-691-6468 |
| Emergency Telephone Number: | 1-800-424-9300 (Chemtrec) 24 hours every day |

## 2. HAZARDS IDENTIFICATION

**Classification**

Classification of the product is in accordance with 29CFR 1910.1200

| | |
|---|---|
| Acute toxicity – Oral | Category 5 |
| Serious eye damage/eye irritation | Category 2A |
| Skin sensitization | Category 1 |

**Label elements**

**Emergency Overview**

**Warning**

**Hazard statements**

May cause an allergic skin reaction
Causes serious eye irritation
May be harmful if swallowed

**Appearance:** Opaque **Physical State:** Liquid **Odor:** Slight fermentation odor

Micro-Blaze
Microbial Products

# Safety Data Sheet
# Micro-Blaze® Emergency Liquid Spill Control

**Precautionary Statements – Prevention**
Wear eye/face protection. Wear protective gloves. Avoid breathing dust/fume/gas/mist/vapors/spray.

**Precautionary Statements – Response**

| | |
|---|---|
| **Eyes** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing |
| **Skin** | IF ON SKIN: Gently wash with plenty of soap and water |
| **Inhalation** | IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing |
| **Ingestion** | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell |

**Precautionary Statements – Storage**
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F

**Precautionary Statements – Disposal**
Dispose of unused product and container in accordance with all applicable local and regional requirements

**Hazards not otherwise classified (HNOC)**
Not applicable

**Other information**

| | |
|---|---|
| Health Hazard | 1 |
| Fire Hazard | 0 |
| Reactivity | 0 |

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Name | Weight - % |
|---|---|
| Water and Proprietary Viable Spore Forming Cultures | > 80 |
| Proprietary blend of Ethoxylated Alcohols and other Organic materials | 3 – 9 |
| Additives | 2 - 5 |

## 4. FIRST AID MEASURES

**First aid measures**

| | |
|---|---|
| **Eye Contact** | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes |
| **Skin Contact** | Wash off immediately with soap and plenty of water |
| **Inhalation** | Move to fresh air |
| **Ingestion** | Clean mouth with water and afterwards drink plenty of water |

**Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **Main symptoms** | No information available |

**Indication of any immediate medical attention and special treatment needed**

| | |
|---|---|
| **Notes to physician** | Treat symptomatically |

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

**Specific Hazards Arising from the Chemical**
No information available

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

| | |
|---|---|
| **Personal Precautions** | Ensure adequate ventilation |

**Environmental precautions**

| | |
|---|---|
| **Environmental Precautions** | It is not anticipated to be hazardous for the environment |

**Methods and material for containment and cleaning up**

| | |
|---|---|
| **Methods for Clean-up** | Pick up and transfer to properly labeled containers |

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

| | |
|---|---|
| **Handling** | Handle in accordance with good industrial hygiene and safety practice |

# Safety Data Sheet
# Micro-Blaze® Emergency Liquid Spill Control

**Conditions for safe storage, including any incompatibilities**

| | |
|---|---|
| **Storage Conditions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Packaging Material** | There could be many packaging types for the product. The details are given in other Verde Environmental, Inc. documents |
| **Incompatible Materials** | Strong acids or alkali compounds and strong oxidizing agents may inactivate biological cultures |

## 8. EXPOSURE CONTROL/PERSONAL PROTECTION

**Individual protection measures, such as personal protective equipment**

| | |
|---|---|
| **Eye Protection** | Avoid contact with eyes |
| **Skin and body protection** | No special technical protective measures are necessary |
| **Respiratory protection** | In case of insufficient ventilation, wear suitable respiratory equipment |
| **General Hygiene Considerations** | Handle in accordance with good industrial hygiene and safety practices |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State** | Liquid |
| **Appearance** | Tan, Opaque |
| **Odor** | Pleasant (perfume) |
| **Odor Threshold** | No information available |

| **Property** | **Values** |
|---|---|
| **pH** | 7.0 – 8.0 |
| **Melting/freezing point** | freeze at 0°C/32°F |
| **Evaporation rate VALUE** | No information available |
| **Flammability (solid, gas)** | Not flammable |
| **Burning rate 100mm VALUE** | No information available |
| **Vapor pressure** | No information available |
| **Vapor density** | No information available |
| **Specific gravity** | No information available |
| **Water solubility** | 99% |
| **Solubility in other solvents** | No information available |
| **Partition Coefficient (n-octanol/water)** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Viscosity of product** | No information available |
| **Viscosity** | No information available |

Micro-Blaze
Microbial Products

# Safety Data Sheet
# Micro-Blaze® Emergency Liquid Spill Control

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**Other Information**

| | |
|---|---|
| **Softening Point** | No information available |
| **VOC Content** | No information available |
| **Density** | No information available |

## 10. STABILITY AND REACTIVITY

**Reactivity**
No data available

**Chemical stability**
Stable under recommended storage conditions

**Possibility of Hazardous Reactions**
None under normal processing

**Conditions to avoid**
Extremes of temperature and direct sunlight

**Incompatible materials**
Strong acids or alkali compounds and strong oxidizing agents may inactivate biological cultures

**Hazardous Decomposition Products**
No information available

## 11. Toxicological Information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | There is no data available for this product |
| **Eye contact** | Avoid contact with eyes. Severely irritating to eyes |
| **Skin contact** | Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. |
| **Ingestion** | Ingestion may cause stomach discomfort |

**Information on toxicological effects**

| | |
|---|---|
| **Symptoms** | No information available |

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

Micro-Blaze
Microbial Products

# Safety Data Sheet
# Micro-Blaze® Emergency Liquid Spill Control

| | |
|---|---|
| **Sensitization** | May cause sensitization of susceptible persons |
| **Mutagenic Effects** | No information available |
| **Reproductive Effects** | No information available |
| **Specific target organ systemic toxicity** | No information available |
| **Aspiration hazard** | No information available |

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

| Chemical Name | Dahnia, acute | Algae, acute | Fish, acute |
|---|---|---|---|
| Proprietary blend of Ethoxylated Alcohols | EC50 (48 hours): 5-10 mg/l | EC50 (72 hours): 10- 100 mg/l | LC50: 1-10 mg/l |

**Persistence/Degradability**
The organic components of the product are biodegradable.

**Bioaccumulation/Accumulation**

| Chemical Name | Persistance and degradability | log Pow |
|---|---|---|
| Proprietary blend of Ethoxylated Alcohols | Readily biodegradable (OECD TG 301B | <0 |

**Other adverse effects**
No known effect

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

| | |
|---|---|
| **Waste Disposal Method** | Dispose of contents/container in accordance with local regulation |
| **Contaminated Packaging** | Empty containers should be taken for local recycling, recovery or waste disposal |

## 14. TRANSPORT INFORMATION

| | |
|---|---|
| **Transport regulations:** | No dangerous goods according to transport regulations<br>No special precautions required |
| **Transport hazard class(es):** | N/A |
| **Packing group:** | N/A |
| **Environmental hazards:** | N/A |

Micro-Blaze
Microbial Products

# Safety Data Sheet
# Micro-Blaze® Emergency Liquid Spill Control

## 15. REGULATORY INFORMATION

**International Inventories**
**Legend:**
***TSCA*** – United States Toxic Substances Control Act Section 8(b) Inventory
***DSL/NDSL*** – Canadian Domestic Substances List/Non-Domestic Substances List

**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 40 CFR Part 372.

**SARA 311/312 Hazardous Categorization**

| | |
|---|---|
| **Acute Health Hazard** | No |
| **Chronic Health Hazard** | No |
| **Fire Hazard** | No |
| **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.

**State Regulations**

**California Proposition 65**
This product does not contain any Proposition 65 chemicals

**State Right-to-Know**
**U.S. EPA Label Information**
**EPA Pesticide Registration Number** Not Applicable

**Canada**

**WHMIS Statement** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

# Safety Data Sheet
# Micro-Blaze® Emergency Liquid Spill Control

## 16. OTHER INFORMATION

**Revision date:** 01.22.2021
**Revision Summary**

No information available

Disclaimer
The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text. Furthermore, as the conditions of use are beyond the control of Verde Environmental, Inc., it is the responsibility of the customer to determine the conditions of safe use of this preparation.

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

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

CONDITIONS

Action 166731

## CONDITIONS

| | |
|---|---|
| Operator:<br>XTO ENERGY, INC<br>6401 Holiday Hill Road<br>Midland, TX 79707 | OGRID:<br>5380 |
| | Action Number:<br>166731 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| rhamlet | XTO's deferral requests to complete final remediation during any future major construction/alteration or final plugging/abandonment, whichever occurs first. Ensolum and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The areas requested for deferral are "BH01" and "BH02". The areas have been delineated and documented in the report. At this time, OCD approves this request. The Deferral Request and C-141 will be accepted for record and marked accordingly. The release will remain open in OCD database files and reflect an open environmental issue. This is a state site and will require like approval from the State Land Office. | 4/26/2023 |