Responsible Party: XTO Energy, Inc

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	nAB1815755244
District RP	2RP-4777
Facility ID	
Application ID	

# **Release Notification**

# **Responsible Party**

OGRID: 5380

Contact Name: Kyle Littrell		Contact T	elephone: (432)-221-7331			
Contact email: Kyle_Littrell@xtoenergy.com		Incident #	: 2RP-4777			
Contact mail NM 88220	ing address:	522 W. Mermod, S	Suite 704 Carlsbac	1,		
			Location	of Release S	ource	
Latitude N 32	2.154685		(NAD 83 in deci	Longitude imal degrees to 5 deci	W -104.01618 mal places)	
Site Name: G	oldenchild (	Central Tank Batter	у	Site Type:	Production Well Facility	
Date Release	Discovered:	: 5/20/2018		API# (if ap	plicable): 30-015-41846	
Unit Letter	Section	Township	Range	Cou	nty	
P	6	25S	29E	Ede	ly	
☐ Crude Oil☐ Produced		Volume Released	d (bbls): 1.5	calculations or specific	Volume Recovered (bbls)  Volume Recovered (bbls)	: 0.5
Produced	Produced Water Volume Released (bbls): 11.5  Is the concentration of dissolved chloride in		nloride in the	Yes No	: 3.5	
Condensa	ıte	produced water >10,000 mg/l?  Volume Released (bbls)			Volume Recovered (bbls)	
Natural G	as	Volume Released (Mcf)			Volume Recovered (Mcf)	
Other (de	scribe)	, ,		Volume/Weight Recovered	ed (provide units)	
	ater loaded u	up due to insufficien ward from the flare.			e flare stack. The facility was asture.	shut in until repairs could be

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	Page 2 of 1	20
: ID	nAB1815755244	

Incident ID	nAB1815755244
District RP	2RP-4777
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the responsible party consider this a major release? Release volume was less than 25 bbls.
19.15.29.7(A) NMAC?	
☐ Yes ⊠ No	
If VES, was immediate no	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
N/A	once given to the OCD: By whom: To whom: when and by what means (phone, email, etc):
	Initial Response
The responsible p	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
The source of the rele	ease has been stopped.
	s been secured to protect human health and the environment.
Released materials ha	we been contained via the use of berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and managed appropriately.
If all the actions described N/A	d above have <u>not</u> been undertaken, explain why:
14/11	
has begun, please attach	AC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
regulations all operators are public health or the environmentalled to adequately investigations.	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and required to report and/or file certain release notifications and perform corrective actions for releases which may endanger nent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name: Kyle	e Littrell Title: SH&E Supervisor
Signature:	Date: <u>5-8-2020</u>
email: _Kyle_Littrell@xtoo	<u>renergy.com</u> Telephone: <u>432-221-7331</u>
OCD O-I-	
OCD Only	
Received by:	Date:

	Page 3 of 12	28
Incident ID	nAB1815755244	
District RP	2RP-4777	
Facility ID		
Application ID		

# **Site Assessment/Characterization**

This hypormation must be provided to the appropriate district office no later than 20 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release?	<u>51-100</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No
Did the release impact areas <b>not</b> 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 vercontamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.	tical extents of soil
Characterization Report Checklist: Each of the following items must be included in the report.	
<ul> <li>Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring well</li> <li>Field data</li> <li>Data table of soil contaminant concentration data</li> </ul>	ls.

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.

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	Page 4 of 12	28
Incident ID	nAB1815755244	
District RP	2RP-4777	
Facility ID		
Application ID		

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Printed Name:Kyle Littrell	Title: SH&E Supervisor	
Signature:	Date: <u>5-8-2020</u>	
email:Kyle_Littrell@xtoenergy.com_	Telephone: (432)-221-7331	
OCD Only		
Received by:	Date:	

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Incident ID	nAB1815755244
District RP	2RP-4777
Facility ID	
Application ID	

# Closure

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

Closure Report Attachment Checklist: Each of the following it	tems must be included in the closure report.	
□ A scaled site and sampling diagram as described in 19.15.29.11 NMAC		
Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)		
☐ Laboratory analyses of final sampling (Note: appropriate ODC	C District office must be notified 2 days prior to final sampling)	
Description of remediation activities		
may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and renhuman health or the environment. In addition, OCD acceptance of a compliance with any other federal, state, or local laws and/or regula restore, reclaim, and re-vegetate the impacted surface area to the conaccordance with 19.15.29.13 NMAC including notification to the Conaccordance.	tions. The responsible party acknowledges they must substantially nditions that existed prior to the release or their final land use in OCD when reclamation and re-vegetation are complete.	
Printed Name: Garrett Green Title:	Environmental Coordinator	
Signature: _ Satt Sur	Date: 4/14/2023	
email:garrett.green@exxonmobil.com	Telephone:575-200-0729	
OCD Only		
Received by: OCD	Date:4/19/2023	
	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible or regulations.	
Closure Approved by:Ashley Maxwell	Date: 4/20/2023	
Printed Name: Ashley Maxwell	Title: Environmental Specialist	



April 14, 2023

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

Re: Closure Request

Goldenchild CTB

Incident Numbers nAB1815755244, nAPP2035256230, nAPP2101331137,

nAPP2101335437, nAPP2102237559

**Eddy County, New Mexico** 

#### To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request* to document additional excavation and soil sampling activities at the Goldenchild Central Tank Battery (CTB) (Site). The purpose of the additional excavation and soil sampling activities was to address deferred soil impacts associated with multiple releases at the Site. This *Closure Request* describing additional excavation and soil sampling activities that have occurred and requesting no further action for Incident Numbers nAB1815755244, nAPP2035256230, nAPP2101331137, nAPP2101335437, and nAPP2102237559.

#### SITE DESCRIPTION AND BACKGROUND

The Site is located in Unit P, Section 6, Township 25 South, Range 29 East, in Eddy County, New Mexico (Figure 1) (32.15437°, -104.01635°) and is associated with oil and gas exploration and production operations on New Mexico state land.

#### Incident Number nAB1815755244

On May 20, 2018, the heater-treater loaded up due to insufficient operating gas, which caused fluid to escape a flare stack. Approximately 1.5 barrels (bbls) of oil and 11.5 bbls of produced water were released. Vacuum trucks recovered a total of 0.5 bbls of oil and 3.5 bbls of produced water. A total of approximately 4,500 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth moving activities within 2 feet of flare stacks and anchors. A *Closure Request* was submitted to the New Mexico Oil Conservation Division (NMOCD) on May 8, 2020, requesting the deferral of approximately 150 cubic yards of impacted soil immediately adjacent to the flare stack (Figure 2) until the Site underwent major reconstruction or the well pad was reclaimed. NMOCD denied the request on September 13, 2022 due to an issue with the C-141, however requested that remediation be completed immediately once the flare has been removed.

XTO Energy, Inc. Closure Request Goldenchild CTB

#### Incident Numbers nAPP2035256230, nAPP2101331137, nAPP2101335437, and nAPP2102237559

Four separate flare fires occurred on December 4, 2020, January 7, 2020, January 8, 2020, and January 15, 2020, which occurred at a flare situated southwest of the previously described flare release. A total of 0.04 bbls of crude oil and 0.27 bbls of condensate were released from the flare, which resulted in four small fires. Over 110 cubic yards of impacted soil were excavated; however, it was deemed unsafe to remove impacted soil immediately adjacent to the flare stack. As a result, a Deferral Request was submitted to the NMOCD on May 28, 2021, with a request to defer approximately 67 cubic yards of residually impacted soil in areas (Figure 2) that were unsafe to excavate until the Site underwent major reconstruction or the well pad was reclaimed. NMOCD approved the Deferral Request on June 28, 2022.

#### 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.

Based on the results of the Site Characterization and approval of the *Deferral Request* by the NMOCD, 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): 100 mg/kg
- Chloride: 600 mg/kg

#### **EXCAVATION SOIL SAMPLING ACTIVITIES**

XTO completed reconstruction activities in the vicinity of two deferred areas and as such, the remaining impacted soil was excavated and confirmation soil samples were collected and analyzed to confirm compliance with NMOCD rules and regulations. Previous remedial actions completed at the Site related to these five releases are documented on the NMOCD Imaging Portal.

Between August 2 and August 4, 2022, Ensolum was onsite to oversee excavation of the residual soil impacts as indicated by field screening results and previous analytical data surrounding the two deferred areas. Excavation activities were performed using a backhoe and transport vehicles. Excavation activities were directed by field screening of volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The excavation extent was mapped utilizing a handheld Global Positioning System (GPS) unit, which is depicted on Figure 3. Photographic documentation is included in Appendix A.

Following removal of impacted soil, Ensolum personnel collected 5-point composite soil samples representing a maximum of 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. All composite soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following contaminants of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.



XTO Energy, Inc. Closure Request Goldenchild CTB

The final northeastern excavation measured approximately 193 square feet in areal extent and a total depth of approximately 9.5 feet bgs. A total of 68 cubic yards of impacted soil was removed, transported, and properly disposed at the R360 Facility in Carlsbad, New Mexico. The final southwestern excavation extent measured approximately 465 square feet in areal extent. A total of approximately 120 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the same R360 Facility. After completion of confirmation sampling, the excavation areas were backfilled and recontoured to match the pad and surroundings so that the areas could be restored and used for oil and gas exploration and production.

#### Incident Numbers nAPP2035256230, nAPP2101331137, nAPP2101335437, and nAPP2102237559

Composite soil samples FS01 through FS03 were collected from the floor of the southwestern excavation at a depth of 7 feet below ground surface (bgs). Composite soil samples SW01 through SW04 were collected from the sidewalls at depths ranging from the ground surface to 7 feet bgs. The excavation size increased based on the potential for initial sidewall soil exceeding the Closure Criteria, in the vicinity of SW01 and SW03, for one or more COC. Soil represented by these samples was removed and subsequent samples SW02 and SW04 were collected. Laboratory analytical results for excavation floor soil samples FS01 through FS03, collected at 7 feet bgs, indicated all COC concentrations were compliant with the Closure Criteria. Laboratory analytical results for final excavation sidewall samples SW02 and SW04 indicated all COC concentrations were compliant with the Closure Criteria. The final excavation extent and excavation soil sample locations are presented on Figure 3. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix B.

#### Incident Number nAB1815755244

Composite soil sample FS13 was collected from the northern excavation floor at a depth of 9 feet bgs. Sidewall soil sample SW39 was collected along the excavation sidewalls at depths ranging from the ground surface to 9 feet bgs. Laboratory analytical results indicated TPH concentrations in both floor and sidewall soil samples exceeded the Closure Criteria. As result, additional impacted soil was excavated and subsequent composite floor soil sample FS14 and sidewall soil samples SW40 through SW42 were collected and analyzed as previously described. Laboratory analytical results for the final excavation indicated all COC concentrations were in compliance with the Closure Criteria. The final excavation extent and excavation soil sample locations are presented on Figure 3. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix B.

#### **CLOSURE REQUEST**

Additional excavation activities were conducted at the Site to address residually impacted soil from multiple releases associated with two flares at the Site. Deferral of final remediation of residual soil impacts was approved by NMOCD. XTO completed reconstruction activities in 2022 and as such, the deferred areas became accessible for final remedial actions. Ensolum oversaw the combined excavation of approximately 188 cubic yards of soil and laboratory analytical results indicated all COC concentrations along the floor and sidewalls of the two excavations were in compliance with the Closure Criteria. Excavation of residually impacted soil has mitigated impacts at this Site. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests final closure for Incident Numbers nAB1815755244, nAPP2035256230, nAPP2101331137, nAPP2101335437, and nAPP2102237559.



XTO Energy, Inc. Closure Request Goldenchild CTB

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

Sincerely, **Ensolum**, **LLC** 

Daniel R. Moir, PG

Senior Managing Geologist

Ashley L. Ager, MS, PG

CEC

cc: Garrett Green, XTO

Shelby Pennington, XTO

New Mexico State Land Office

## Appendices:

Figure 1 Site Receptor Map Figure 2 Deferred Areas

Figure 3 Excavation Soil Sample Locations
Table 1 Soil Sample Analytical Results

Appendix A Photographic Log

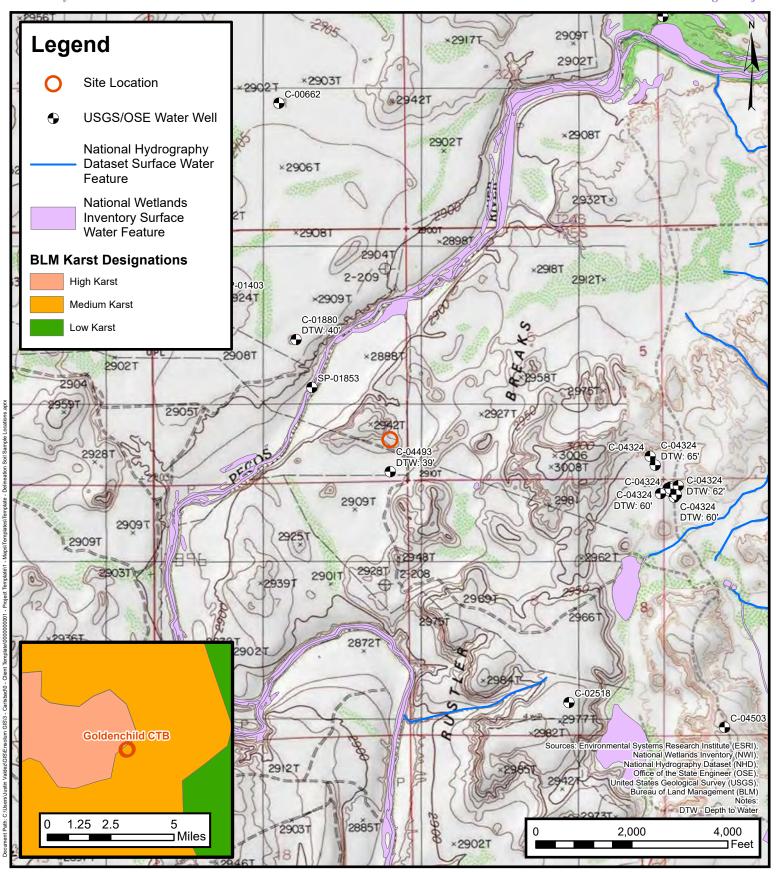
Appendix B Laboratory Analytical Reports & Chain-of-Custody Documentation

Appendix C NMOCD Notifications

Appendix D Final C-141



Figures

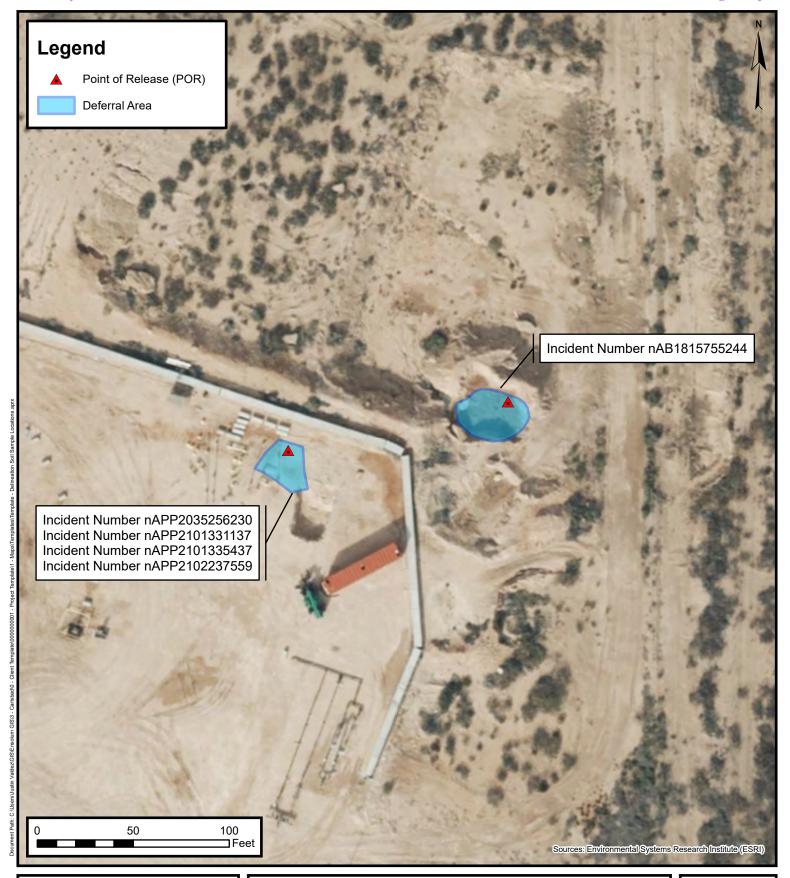




# Site Receptor Map

Goldenchild CTB XTO ENERGY, INC

Incident ID: nAB1815755244, nAPP2035256230, nAPP2101331137, nAPP2101335437, nAPP2102237559 Unit P, Section 6, Township 25 South, Range 29 East Eddy County, New Mexico FIGURE





# **Deferral Areas**

Goldenchild CTB XTO ENERGY, INC

Incident ID: nAB1815755244, nAPP2035256230, nAPP2101331137, nAPP2101335437, nAPP2102237559
Unit P, Section 6, Township 25 South, Range 29 East Eddy County, New Mexico

FIGURE





# **Excavation Soil Sample Locations**

Goldenchild CTB XTO ENERGY, INC

Incident ID: nAB1815755244, nAPP2035256230, nAPP2101331137, nAPP2101335437, nAPP2102237559
Unit P, Section 6, Township 25 South, Range 29 East Eddy County, New Mexico

FIGURE



Table

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# TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS GOLDENCHILD 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 I C	losure Criteria (	NMAC 19.15.29)	10	50	NE	NE	NE	NE	100	600
	Incid	ent Numbers nA	PP2035256230,	nAPP210133113	7, nAPP210133	5437, and nAPP	2102237559 Co	nfirmation Soil Sa	mples	
FS01	08/04/2022	7	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	<50.0	314
FS02	08/04/2022	7	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	367
FS03	08/04/2022	7	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	464
SW01	08/04/2022	0-7	<0.00200	<0.00400	<50.0	<50.0	<del>&lt;50.0</del>	<50.0	<del>&lt;50.0</del>	1,250
SW02	08/04/2022	0-7	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	450
SW03	08/04/2022	0-7	<0.00200	<0.00401	<del>&lt;49.9</del>	<49.9	<49.9	<49.9	<del>&lt;49.9</del>	741
SW04	08/04/2022	0-7	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	<49.8	423
			Incide	ent Number nAB1	1815755244 Co	nfirmation Soil S	Samples			
FS13	08/02/2022	9	<0.00201	0.0195	<49.8	<del>566</del>	72.7	<del>566</del>	639	8.67
FS14	08/03/2022	9.5	<0.00200	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	8.08
SW39	08/03/2022	0-9	<0.00202	<0.00403	<del>&lt;50.0</del>	466	71.2	466	<del>537</del>	45.1
SW40	08/03/2022	0-9	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	30.9
SW41	08/03/2022	0-9	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	31.4
SW42	08/04/2022	0-9	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	286

#### Notes:

bgs: below ground surface mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

 $\label{eq:BTEX:Benzene} \mbox{BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes}$ 

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or

reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

Grey text indicates soil sample removed during excavation activities

Ensolum



APPENDIX A

Photographic Log



## Photographic Log

XTO Energy, Inc Goldenchild CTB Multiple Incident Numbers





Date:

8/4/2023

8/4/2023

Photograph: 1 Date: 8/4/2023

Description: Excavation preparation

View: North

Photograph: 2

Description: Excavation actvities

2. Zavarano.

View: West





Photograph: 3 Date: 8/4/2023

Description: Excavation progress

View: Northeast

Photograph: 4 Date:

Description: Finishing excavation activities

View: West



**APPENDIX B** 

Laboratory Analytical Reports & Chain-of-Custody Documentation



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2731-1

Laboratory Sample Delivery Group: 03E1558018

Client Project/Site: Goldenchild CTB

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Josh Adams

RAMER

Authorized for release by: 8/18/2022 9:48:24 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum
Project/Site: Goldenchild CTB
Laboratory Job ID: 890-2731-1
SDG: 03E1558018

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K.
P

## **Definitions/Glossary**

Job ID: 890-2731-1 Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558018

#### **Qualifiers**

#### **GC VOA**

Qualifier **Qualifier Description** F2 MS/MSD RPD exceeds control limits U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

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

**Glossary** 

MCL

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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: Ensolum

Project/Site: Goldenchild CTB

Job ID: 890-2731-1 SDG: 03E1558018

Job ID: 890-2731-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2731-1

#### Receipt

The samples were received on 8/5/2022 11:08 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-31861 and analytical batch 880-32007 was outside control limits. Sample non-homogeneity is suspected.

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

#### GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-31770/2-A) and (LCSD 880-31770/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: FS01 (890-2731-1). 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: FS02 (890-2731-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: SW02 (890-2731-5). 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: SW04 (890-2731-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-31858 and analytical batch 880-31926 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.

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Lab Sample ID: 890-2731-1

# **Client Sample Results**

Client: Ensolum Job ID: 890-2731-1
Project/Site: Goldenchild CTB SDG: 03E1558018

**Client Sample ID: FS01** 

Date Collected: 08/04/22 13:00 Date Received: 08/05/22 11:08

Sample Depth: 7'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		08/09/22 15:47	08/11/22 19:09	1
Toluene	<0.00202	U	0.00202	mg/Kg		08/09/22 15:47	08/11/22 19:09	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		08/09/22 15:47	08/11/22 19:09	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		08/09/22 15:47	08/11/22 19:09	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		08/09/22 15:47	08/11/22 19:09	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		08/09/22 15:47	08/11/22 19:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130			08/09/22 15:47	08/11/22 19:09	1
1,4-Difluorobenzene (Surr)	102		70 - 130			08/09/22 15:47	08/11/22 19:09	1
- Method: Total BTEX - Total BTEX	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			08/12/22 10:15	1
Mothod: 9015 NM Diocol Panar	Organics (DB)	0) (60)						
Method: 8015 NM - Diesel Range Analyte	•	O) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	•	Qualifier	RL 50.0	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 08/09/22 09:31	
Analyte Total TPH		Qualifier U			<u>D</u>	Prepared		
Analyte	Result <50.0	Qualifier U			<u>D</u>	Prepared Prepared		1
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	Result <50.0	Qualifier U RO) (GC) Qualifier	50.0	mg/Kg		<u> </u>	08/09/22 09:31	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <50.0  ge Organics (Dige Result )	Qualifier U  RO) (GC) Qualifier U	50.0	mg/Kg		Prepared	08/09/22 09:31  Analyzed	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10		Qualifier U  RO) (GC) Qualifier U	50.0 RL 50.0	mg/Kg  Unit  mg/Kg		Prepared 08/08/22 14:08	08/09/22 09:31  Analyzed  08/09/22 03:13	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result	Qualifier U  RO) (GC) Qualifier U  U	50.0  RL  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/08/22 14:08 08/08/22 14:08	08/09/22 09:31  Analyzed 08/09/22 03:13 08/09/22 03:13	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result	Qualifier U  RO) (GC) Qualifier U  U	50.0  RL 50.0  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/08/22 14:08 08/08/22 14:08 08/08/22 14:08	08/09/22 09:31  Analyzed 08/09/22 03:13 08/09/22 03:13	Dil Face
Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result   <50.0	Qualifier U  RO) (GC) Qualifier U  U	50.0  RL 50.0  50.0  50.0  Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/08/22 14:08 08/08/22 14:08 08/08/22 14:08 Prepared	08/09/22 09:31  Analyzed  08/09/22 03:13  08/09/22 03:13  08/09/22 03:13  Analyzed	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result   <50.0	Qualifier U  RO) (GC) Qualifier U  U  Qualifier S1+	50.0  RL 50.0  50.0  50.0  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/08/22 14:08 08/08/22 14:08 08/08/22 14:08  Prepared 08/08/22 14:08	08/09/22 09:31  Analyzed 08/09/22 03:13  08/09/22 03:13  Analyzed 08/09/22 03:13	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result	Qualifier U  RO) (GC) Qualifier U  U  Qualifier S1+	50.0  RL 50.0  50.0  50.0  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/08/22 14:08 08/08/22 14:08 08/08/22 14:08  Prepared 08/08/22 14:08	08/09/22 09:31  Analyzed 08/09/22 03:13  08/09/22 03:13  Analyzed 08/09/22 03:13	Dil Fac

**Client Sample ID: FS02** 

Date Collected: 08/04/22 13:05 Date Received: 08/05/22 11:08

Sample Depth: 7'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 19:30	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 19:30	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 19:30	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		08/09/22 15:47	08/11/22 19:30	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 19:30	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/09/22 15:47	08/11/22 19:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130			08/09/22 15:47	08/11/22 19:30	1

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Lab Sample ID: 890-2731-2

Matrix: Solid

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# **Client Sample Results**

Client: Ensolum Job ID: 890-2731-1
Project/Site: Goldenchild CTB SDG: 03E1558018

Client Sample ID: FS02 Lab Sample ID: 890-2731-2

Date Collected: 08/04/22 13:05 Date Received: 08/05/22 11:08

Sample Depth: 7'

Method: 8021B - Volatile Organic Compound	s (GC) (Continued)
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Surrogate	%Recovery Qual	lifier Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	105	70 - 130	08/09/22 15:47	08/11/22 19:30	1

ı				
ı	Method:	Total RTFX	: - Total BTEX	Calculation
ı	mictilou.	TOTAL DIE	- IOLAI DIEA	Oulculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00399	U	0.00399	mg/Kg			08/12/22 10:15	1

Mothod: 2015 NM - Diocol	Pango Organice (DPO) (CC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	ma/Ka			08/09/22 09:31	1

Method: 8015B	NM Discol	Dange Ore	aaniee (DD(	)) (CC)
MICHIOU. OU IOD	INIVI - DIESEI	Rallue Oli	ualiics lunc	JI (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 03:34	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 03:34	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 03:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	Mecovery Qualifier	Liiiits	riepait	eu Allaiyzeu	DII Fac
1-Chlorooctane	112	70 - 130	08/08/22 1	08/09/22 03:34	1
o-Terphenyl	139 S1+	70 - 130	08/08/22 1	14:08 08/09/22 03:34	1
_					

 $\label{eq:method:method:method:method:one} \textbf{Method: 300.0 - Anions, lon Chromatography - Soluble}$ 

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	367		5.01	mg/Kg			08/17/22 16:05	1

Client Sample ID: FS03

Date Collected: 08/04/22 14:00

Matrix: Solid

Date Collected: 08/04/22 14:00 Date Received: 08/05/22 11:08

Sample Depth: 7'

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

wethout ouz 16 - volatile Orga	nic Compounds (	(GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/09/22 15:47	08/11/22 21:21	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/09/22 15:47	08/11/22 21:21	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/09/22 15:47	08/11/22 21:21	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/09/22 15:47	08/11/22 21:21	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/09/22 15:47	08/11/22 21:21	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/09/22 15:47	08/11/22 21:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130			08/09/22 15:47	08/11/22 21:21	1
1,4-Difluorobenzene (Surr)	106		70 - 130			08/09/22 15:47	08/11/22 21:21	1

Method:	Total RTF)	( - Total RTFX	Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	ma/Ka			08/12/22 10:15	1

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9 U	49.9	mg/Kg			08/09/22 09:31	1

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Lab Sample ID: 890-2731-3

# **Client Sample Results**

Client: Ensolum Job ID: 890-2731-1
Project/Site: Goldenchild CTB SDG: 03E1558018

**Client Sample ID: FS03** 

Date Collected: 08/04/22 14:00 Date Received: 08/05/22 11:08

Sample Depth: 7'

Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 03:55	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 03:55	1
C10-C28)								
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 03:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	106		70 - 130			08/08/22 14:08	08/09/22 03:55	1
o-Terphenyl	130		70 - 130			08/08/22 14:08	08/09/22 03:55	1
– Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	464		4.98	mg/Kg			08/17/22 16:28	1

Client Sample ID: SW01

Date Collected: 08/04/22 13:30

Lab Sample ID: 890-2731-4

Matrix: Solid

Date Received: 08/05/22 11:08

Sample Depth: 0-7'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 21:41	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 21:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 21:41	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/09/22 15:47	08/11/22 21:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 21:41	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/09/22 15:47	08/11/22 21:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130			08/09/22 15:47	08/11/22 21:41	1
1,4-Difluorobenzene (Surr)	100		70 - 130			08/09/22 15:47	08/11/22 21:41	1
- Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			08/12/22 10:15	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/09/22 09:31	1
-								
The Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Method: 8015B NM - Diesel Rang Analyte		RO) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
		Qualifier	RL 50.0	Unit mg/Kg	<u>D</u>	Prepared 08/08/22 14:08	Analyzed 08/09/22 04:16	
Analyte Gasoline Range Organics	Result	Qualifier U			<u> </u>			1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result < 50.0	Qualifier U	50.0	mg/Kg	<u>D</u>	08/08/22 14:08	08/09/22 04:16	1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <50.0 <50.0	Qualifier U U U	50.0	mg/Kg	<u>D</u>	08/08/22 14:08 08/08/22 14:08	08/09/22 04:16 08/09/22 04:16	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result  <50.0 <50.0 <50.0	Qualifier U U U	50.0 50.0 50.0	mg/Kg	<u> </u>	08/08/22 14:08 08/08/22 14:08 08/08/22 14:08	08/09/22 04:16 08/09/22 04:16 08/09/22 04:16	1 1

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Job ID: 890-2731-1

SDG: 03E1558018

Lab Sample ID: 890-2731-4

Project/Site: Goldenchild CTB

Client Sample ID: SW01

Date Collected: 08/04/22 13:30 Date Received: 08/05/22 11:08

Sample Depth: 0-7'

Client: Ensolum

Method: 300.0 - Anions, Ion Chromatography - Soluble										
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Chloride	1250		25.0	mg/Kg			08/17/22 16:36	5		

Client Sample ID: SW02

Lab Sample ID: 890-2731-5

Date Collected: 08/04/22 13:45

Matrix: Solid

Date Collected: 08/04/22 13:45 Date Received: 08/05/22 11:08

Sample Depth: 0-7'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/09/22 15:47	08/11/22 22:02	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/09/22 15:47	08/11/22 22:02	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/09/22 15:47	08/11/22 22:02	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		08/09/22 15:47	08/11/22 22:02	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		08/09/22 15:47	08/11/22 22:02	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		08/09/22 15:47	08/11/22 22:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130			08/09/22 15:47	08/11/22 22:02	1
1,4-Difluorobenzene (Surr)	106		70 - 130			08/09/22 15:47	08/11/22 22:02	1
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/12/22 10:15	1
Analyte Total TPH	<b>Result</b> <49.9	Qualifier U	49.9	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 08/09/22 09:31	Dil Fac
Method: 8015B NM - Diesel Ran	•							
Analyte		Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 04:37	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 04:37	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 04:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	110		70 - 130			08/08/22 14:08	08/09/22 04:37	1
o-Terphenyl	136	S1+	70 - 130			08/08/22 14:08	08/09/22 04:37	1
Method: 2000 Anione Ion Chr	omatography -	Soluble						
Method: 300.0 - Anions, Ion Chr	omatograpmy -	Colubic						
Analyte	•	Qualifier	RL	Unit mg/Kg	D	Prepared	Analyzed	Dil Fac

# **Client Sample Results**

Client: Ensolum Job ID: 890-2731-1
Project/Site: Goldenchild CTB SDG: 03E1558018

Client Sample ID: SW03 Lab Sample ID: 890-2731-6

Date Collected: 08/04/22 13:48
Date Received: 08/05/22 11:08

Sample Depth: 0-7'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 22:22	
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 22:22	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 22:22	
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		08/09/22 15:47	08/11/22 22:22	
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 22:22	
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		08/09/22 15:47	08/11/22 22:22	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	103		70 - 130			08/09/22 15:47	08/11/22 22:22	
1,4-Difluorobenzene (Surr)	105		70 - 130			08/09/22 15:47	08/11/22 22:22	
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00401	U	0.00401	mg/Kg			08/12/22 10:15	
Analyte Total TPH	<49.9	Qualifier U	<b>RL</b> 49.9	mg/Kg	D	Prepared	Analyzed 08/09/22 09:31	Dil Fa
Total TPH - -	<49.9	U	49.9	mg/Kg			08/09/22 09:31	,
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 04:58	
Diesel Range Organics (Over	<49.9	U	49.9	mg/Kg		08/08/22 14:08	08/09/22 04:58	
C10-C28) OII Range Organics (Over C28-C36)	<49.9	ш	49.9	mg/Kg		08/08/22 14:08	08/09/22 04:58	
On realige Organics (Over 020-030)	<b>~</b> 43.3	O	43.3	mg/kg		00/00/22 14:00	00/09/22 04.30	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	105		70 - 130			08/08/22 14:08	08/09/22 04:58	
o-Terphenyl	128		70 - 130			08/08/22 14:08	08/09/22 04:58	
Method: 300.0 - Anions, Ion Chro	0 . ,							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
<u> </u>	741		5.04	mg/Kg			08/17/22 16:52	

Client Sample ID: SW04 Lab Sample ID: 890-2731-7

Date Collected: 08/04/22 13:50 Date Received: 08/05/22 11:08

Sample Depth: 0-1'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		08/09/22 15:47	08/11/22 22:43	1
Toluene	<0.00202	U	0.00202	mg/Kg		08/09/22 15:47	08/11/22 22:43	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		08/09/22 15:47	08/11/22 22:43	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		08/09/22 15:47	08/11/22 22:43	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		08/09/22 15:47	08/11/22 22:43	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		08/09/22 15:47	08/11/22 22:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			08/09/22 15:47	08/11/22 22:43	1

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**Matrix: Solid** 

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Sample Depth: 0-1'

# **Client Sample Results**

Client: Ensolum Job ID: 890-2731-1 Project/Site: Goldenchild CTB SDG: 03E1558018

**Client Sample ID: SW04** 

Lab Sample ID: 890-2731-7 Date Collected: 08/04/22 13:50 Matrix: Solid

Date Received: 08/05/22 11:08

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	102		70 - 130			08/09/22 15:47	08/11/22 22:43	1
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			08/12/22 10:15	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			08/09/22 09:31	1
Method: 8015B NM - Diesel Rang	e Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
						08/08/22 14:08	00/00/00 05:00	
5 5	<49.8	U	49.8	mg/Kg		00/00/22 14:00	08/09/22 05:20	1
(GRO)-C6-C10 Diesel Range Organics (Over	<49.8 <49.8		49.8 49.8	mg/Kg mg/Kg		08/08/22 14:08	08/09/22 05:20	1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28)		U						1 1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		08/08/22 14:08	08/09/22 05:20	1 1 1 1 1 1 Dil Fac
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<49.8 <49.8	U	49.8 49.8	mg/Kg		08/08/22 14:08 08/08/22 14:08	08/09/22 05:20 08/09/22 05:20	1 1 1 1 Dil Fac

Method: 300.0 - Anions, Ion Chron	natography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	423		5.04	mg/Kg			08/17/22 17:00	1

# **Surrogate Summary**

Client: Ensolum Job ID: 890-2731-1 Project/Site: Goldenchild CTB SDG: 03E1558018

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-17785-A-21-C MS	Matrix Spike	105	103	
880-17785-A-21-D MSD	Matrix Spike Duplicate	98	108	
880-17971-A-1-G MS	Matrix Spike	101	99	
880-17971-A-1-H MSD	Matrix Spike Duplicate	99	99	
890-2731-1	FS01	99	102	
890-2731-2	FS02	99	105	
890-2731-3	FS03	93	106	
890-2731-4	SW01	98	100	
890-2731-5	SW02	100	106	
890-2731-6	SW03	103	105	
890-2731-7	SW04	105	102	
LCS 880-31861/1-A	Lab Control Sample	103	97	
LCS 880-32010/1-A	Lab Control Sample	101	98	
LCSD 880-31861/2-A	Lab Control Sample Dup	96	98	
LCSD 880-32010/2-A	Lab Control Sample Dup	99	100	
MB 880-31861/5-A	Method Blank	93	104	
	Method Blank	93	101	

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)	
820-5242-A-1-I MS	Matrix Spike	90	99	
820-5242-A-1-J MSD	Matrix Spike Duplicate	88	97	
890-2731-1	FS01	110	133 S1+	
890-2731-2	FS02	112	139 S1+	
890-2731-3	FS03	106	130	
890-2731-4	SW01	105	129	
890-2731-5	SW02	110	136 S1+	
890-2731-6	SW03	105	128	
890-2731-7	SW04	107	133 S1+	
LCS 880-31770/2-A	Lab Control Sample	122	150 S1+	
LCSD 880-31770/3-A	Lab Control Sample Dup	118	142 S1+	
	Method Blank	95	117	

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2731-1 SDG: 03E1558018 Project/Site: Goldenchild CTB

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

Lab Sample ID: MB 880-31861/5-A

**Matrix: Solid Analysis Batch: 32007** 

MR MR

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31861

	IND	1410						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 15:56	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 15:56	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 15:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/09/22 15:47	08/11/22 15:56	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:47	08/11/22 15:56	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/09/22 15:47	08/11/22 15:56	1

MB MB

Surrogate	%Recovery 0	Qualifier Lim	its	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93	70 -	130	08/09/22 15:47	08/11/22 15:56	1
1.4-Difluorobenzene (Surr)	104	70 -	130	08/09/22 15:47	08/11/22 15:56	1

Lab Sample ID: LCS 880-31861/1-A

Matrix: Solid

Analysis Batch: 32007

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31861

	<b>Spike</b>	LCS	LUS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09393		mg/Kg		94	70 - 130	
Toluene	0.100	0.1024		mg/Kg		102	70 - 130	
Ethylbenzene	0.100	0.1067		mg/Kg		107	70 - 130	
m-Xylene & p-Xylene	0.200	0.2196		mg/Kg		110	70 - 130	
o-Xylene	0.100	0.1061		mg/Kg		106	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	103	70 - 130
1,4-Difluorobenzene (Surr)	97	70 - 130

Lab Sample ID: LCSD 880-31861/2-A

**Matrix: Solid** 

**Analysis Batch: 32007** 

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

Prep Type: Total/NA

Prep Batch: 31861

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1034		mg/Kg		103	70 - 130	10	35
Toluene	0.100	0.1019		mg/Kg		102	70 - 130	0	35
Ethylbenzene	0.100	0.1052		mg/Kg		105	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2143		mg/Kg		107	70 - 130	2	35
o-Xylene	0.100	0.1038		mg/Kg		104	70 - 130	2	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1.4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 880-17785-A-21-C MS

**Matrix: Solid** 

Analysis Batch: 32007

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31861

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U	0.0998	0.1199		mg/Kg		120	70 - 130	
Toluene	< 0.00200	U	0.0998	0.1107		mg/Kg		111	70 - 130	

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## QC Sample Results

Client: Ensolum Job ID: 890-2731-1 Project/Site: Goldenchild CTB SDG: 03E1558018

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

Lab Sample ID: 880-17785-A-21-C MS

**Matrix: Solid** 

**Analysis Batch: 32007** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31861

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.00200 U F2 0.0998 0.1129 113 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00401 U F2 0.200 0.2330 mg/Kg 117 70 - 130 0.0998 o-Xylene <0.00200 UF2 0.1130 mg/Kg 70 - 130 113

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31861

**Matrix: Solid Analysis Batch: 32007** 

Lab Sample ID: 880-17785-A-21-D MSD

Sample Sample Spike MSD MSD RPD Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits <0.00200 U 0.100 0.1101 Benzene mg/Kg 110 70 - 130 9 35 Toluene <0.00200 U 0.100 0.08283 mg/Kg 82 70 - 130 29 35 73 Ethylbenzene <0.00200 UF2 0.100 0.07374 F2 mg/Kg 70 - 130 42 35 0.201 0.1474 F2 73 70 - 130 45 35 m-Xylene & p-Xylene <0.00401 UF2 mg/Kg 0.100 0.07288 F2 <0.00200 UF2 73 70 - 130 43 o-Xylene mg/Kg

MSD MSD

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

Lab Sample ID: MB 880-32010/5-A

**Matrix: Solid** 

**Analysis Batch: 32007** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 32010

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/11/22 13:38	08/12/22 03:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/11/22 13:38	08/12/22 03:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/11/22 13:38	08/12/22 03:35	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/11/22 13:38	08/12/22 03:35	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/11/22 13:38	08/12/22 03:35	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/11/22 13:38	08/12/22 03:35	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	08/11/22 13:38	08/12/22 03:35	1
1,4-Difluorobenzene (Surr)	101		70 - 130	08/11/22 13:38	08/12/22 03:35	1

Lab Sample ID: LCS 880-32010/1-A

**Matrix: Solid** 

**Analysis Batch: 32007** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 32010

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	0.100	0.09744		mg/Kg		97	70 - 130
Toluene	0.100	0.1021		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.1056		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	0.200	0.2158		mg/Kg		108	70 - 130

## QC Sample Results

Client: Ensolum Job ID: 890-2731-1 Project/Site: Goldenchild CTB SDG: 03E1558018

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

Lab Sample ID: LCS 880-32010/1-A **Matrix: Solid** 

**Analysis Batch: 32007** 

Surrogate

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 32010

Spike LCS LCS Analyte Added Result Qualifier Unit %Rec o-Xylene 0.100 0.1072 107 mg/Kg

Limits 70 - 130

LCS LCS %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 101 70 - 130 70 - 130 1,4-Difluorobenzene (Surr) 98

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 32010

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Lab Sample ID: LCSD 880-32010/2-A **Matrix: Solid** 

**Analysis Batch: 32007** 

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1031		mg/Kg		103	70 - 130	6	35
Toluene	0.100	0.1017		mg/Kg		102	70 - 130	0	35
Ethylbenzene	0.100	0.1052		mg/Kg		105	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2144		mg/Kg		107	70 - 130	1	35
o-Xylene	0.100	0.1051		mg/Kg		105	70 - 130	2	35

LCSD LCSD Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 99 70 - 130 1,4-Difluorobenzene (Surr) 100 70 - 130

Lab Sample ID: 880-17971-A-1-G MS

**Matrix: Solid** 

Analysis Batch: 32007									Prep	Batch: 32010
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U	0.101	0.09791		mg/Kg		97	70 - 130	
Toluene	<0.00199	U	0.101	0.09258		mg/Kg		92	70 - 130	
Ethylbenzene	<0.00199	U	0.101	0.08611		mg/Kg		85	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1721		mg/Kg		85	70 - 130	
o-Xylene	< 0.00199	U	0.101	0.08436		mg/Kg		84	70 - 130	

MS MS Surrogate %Recovery Qualifier Limits 70 - 130 4-Bromofluorobenzene (Surr) 101 70 - 130 1,4-Difluorobenzene (Surr) 99

Lab Sample ID: 880-17971-A-1-H MSD

**Matrix: Solid** 

**Analysis Batch: 32007** 

Prep Type: Total/NA

Prep Batch: 32010

•	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00199	U	0.100	0.09717		mg/Kg		97	70 - 130	1	35
Toluene	< 0.00199	U	0.100	0.09134		mg/Kg		91	70 - 130	1	35
Ethylbenzene	< 0.00199	U	0.100	0.08551		mg/Kg		85	70 - 130	1	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1703		mg/Kg		85	70 - 130	1	35
o-Xylene	<0.00199	U	0.100	0.08356		mg/Kg		83	70 - 130	1	35

Client: Ensolum

Job ID: 890-2731-1 SDG: 03E1558018

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

Lab Sample ID: 880-17971-A-1-H MSD

**Matrix: Solid** 

Analysis Batch: 32007

Project/Site: Goldenchild CTB

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 32010

MSD MSD

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

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

Lab Sample ID: MB 880-31770/1-A

**Matrix: Solid** 

**Analysis Batch: 31670** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31770

MB MB

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 08/08/22 14:08 08/08/22 20:26 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 08/08/22 14:08 08/08/22 20:26 C10-C28) 08/08/22 20:26 Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 08/08/22 14:08

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130	08/08/22 14:08	08/08/22 20:26	1
o-Terphenyl	117		70 - 130	08/08/22 14:08	08/08/22 20:26	1

Lab Sample ID: LCS 880-31770/2-A

**Matrix: Solid** 

**Analysis Batch: 31670** 

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

Prep Batch: 31770

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	984.0		mg/Kg		98	70 - 130	 
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1141		mg/Kg		114	70 - 130	
C10-C28)								

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	122	70 _ 130
o-Terphenyl	150 S1+	70 - 130

Lab Sample ID: LCSD 880-31770/3-A

**Analysis Batch: 31670** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31770

LCSD LCSD Spike %Rec RPD Analyte Added Result Qualifier Unit %Rec Limits Limit Gasoline Range Organics 1000 1015 101 70 - 130 3 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 1093 109 70 - 130 20 mg/Kg

C10-C28)

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	142	S1+	70 - 130

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**Matrix: Solid** 

LCSD LCSD

Released to Imaging: 4/20/2023 7:34:48 AM

Client: Ensolum Job ID: 890-2731-1 Project/Site: Goldenchild CTB

SDG: 03E1558018

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

Lab Sample ID: 820-5242-A-1-I MS

**Matrix: Solid** 

**Analysis Batch: 31670** 

Client Sample ID: Matrix Spike Prep Type: Total/NA Prep Batch: 31770

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<49.9	U	999	989.5		mg/Kg		97	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<49.9	U	999	748.9		mg/Kg		75	70 - 130	
C10-C28)										

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	99		70 - 130

Lab Sample ID: 820-5242-A-1-J MSD

Matrix: Solid

**Analysis Batch: 31670** 

Client Sample ID: Matr	ix Spike Duplicate
------------------------	--------------------

Prep Type: Total/NA

Prep Batch: 31770

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	<49.9	U	999	919.9		mg/Kg		90	70 - 130	7	20
(GRO)-C6-C10 Diesel Range Organics (Over	<49.9	U	999	735.1		mg/Kg		74	70 - 130	2	20
C10-C28)											

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	88		70 - 130
o-Terphenyl	97		70 - 130

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

Lab Sample ID: MB 880-31858/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 31926

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			08/17/22 14:54	1

Lab Sample ID: LCS 880-31858/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 31926

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	257.0		mg/Kg		103	90 - 110	

Lab Sample ID: LCSD 880-31858/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 31926

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	257.1		mg/Kg	_	103	90 - 110	0	20

## QC Sample Results

Client: Ensolum Job ID: 890-2731-1 Project/Site: Goldenchild CTB

SDG: 03E1558018

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-17809-A-1-D MS Client Sample ID: Matrix Spike **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 31926

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	3340	F1	2520	6300	F1	mg/Kg		118	90 - 110	

Lab Sample ID: 880-17809-A-1-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 31926** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	3340	F1	2520	6309	F1	mg/Kg		118	90 - 110	0	20

Lab Sample ID: 890-2732-A-1-F MS Client Sample ID: Matrix Spike

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 31926** 

MS MS %Rec Spike Sample Sample Analyte Result Qualifier Added Result Qualifier Unit Limits Chloride 7.85 250 276.5 107 90 - 110 mg/Kg

Lab Sample ID: 890-2732-A-1-F MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 31926

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	7.85		250	276.4		mg/Kg		107	90 - 110	0	20

# **QC Association Summary**

Client: Ensolum Job ID: 890-2731-1
Project/Site: Goldenchild CTB SDG: 03E1558018

**GC VOA** 

Prep Batch: 31861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2731-1	FS01	Total/NA	Solid	5035	_
890-2731-2	FS02	Total/NA	Solid	5035	
890-2731-3	FS03	Total/NA	Solid	5035	
890-2731-4	SW01	Total/NA	Solid	5035	
890-2731-5	SW02	Total/NA	Solid	5035	
890-2731-6	SW03	Total/NA	Solid	5035	
890-2731-7	SW04	Total/NA	Solid	5035	
MB 880-31861/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31861/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31861/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17785-A-21-C MS	Matrix Spike	Total/NA	Solid	5035	
880-17785-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

**Analysis Batch: 32007** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2731-1	FS01	Total/NA	Solid	8021B	31861
890-2731-2	FS02	Total/NA	Solid	8021B	31861
890-2731-3	FS03	Total/NA	Solid	8021B	31861
890-2731-4	SW01	Total/NA	Solid	8021B	31861
890-2731-5	SW02	Total/NA	Solid	8021B	31861
890-2731-6	SW03	Total/NA	Solid	8021B	31861
890-2731-7	SW04	Total/NA	Solid	8021B	31861
MB 880-31861/5-A	Method Blank	Total/NA	Solid	8021B	31861
MB 880-32010/5-A	Method Blank	Total/NA	Solid	8021B	32010
LCS 880-31861/1-A	Lab Control Sample	Total/NA	Solid	8021B	31861
LCS 880-32010/1-A	Lab Control Sample	Total/NA	Solid	8021B	32010
LCSD 880-31861/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31861
LCSD 880-32010/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32010
880-17785-A-21-C MS	Matrix Spike	Total/NA	Solid	8021B	31861
880-17785-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31861
880-17971-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	32010
880-17971-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	32010

Prep Batch: 32010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-32010/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32010/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-32010/2	-A Lab Control Sample Dup	Total/NA	Solid	5035	
880-17971-A-1-G N	MS Matrix Spike	Total/NA	Solid	5035	
880-17971-A-1-H N	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 32078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2731-1	FS01	Total/NA	Solid	Total BTEX	-
890-2731-2	FS02	Total/NA	Solid	Total BTEX	
890-2731-3	FS03	Total/NA	Solid	Total BTEX	
890-2731-4	SW01	Total/NA	Solid	Total BTEX	
890-2731-5	SW02	Total/NA	Solid	Total BTEX	
890-2731-6	SW03	Total/NA	Solid	Total BTEX	
890-2731-7	SW04	Total/NA	Solid	Total BTEX	

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### **QC Association Summary**

Client: Ensolum

Project/Site: Goldenchild CTB

Job ID: 890-2731-1

SDG: 03E1558018

GC Semi VOA

**Analysis Batch: 31670** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2731-1	FS01	Total/NA	Solid	8015B NM	31770
890-2731-2	FS02	Total/NA	Solid	8015B NM	31770
890-2731-3	FS03	Total/NA	Solid	8015B NM	31770
890-2731-4	SW01	Total/NA	Solid	8015B NM	31770
890-2731-5	SW02	Total/NA	Solid	8015B NM	31770
890-2731-6	SW03	Total/NA	Solid	8015B NM	31770
890-2731-7	SW04	Total/NA	Solid	8015B NM	31770
MB 880-31770/1-A	Method Blank	Total/NA	Solid	8015B NM	31770
LCS 880-31770/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31770
LCSD 880-31770/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31770
820-5242-A-1-I MS	Matrix Spike	Total/NA	Solid	8015B NM	31770
820-5242-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31770

Prep Batch: 31770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2731-1	FS01	Total/NA	Solid	8015NM Prep	
890-2731-2	FS02	Total/NA	Solid	8015NM Prep	
890-2731-3	FS03	Total/NA	Solid	8015NM Prep	
890-2731-4	SW01	Total/NA	Solid	8015NM Prep	
890-2731-5	SW02	Total/NA	Solid	8015NM Prep	
890-2731-6	SW03	Total/NA	Solid	8015NM Prep	
890-2731-7	SW04	Total/NA	Solid	8015NM Prep	
MB 880-31770/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31770/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31770/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
820-5242-A-1-I MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
820-5242-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2731-1	FS01	Total/NA	Solid	8015 NM	
890-2731-2	FS02	Total/NA	Solid	8015 NM	
890-2731-3	FS03	Total/NA	Solid	8015 NM	
890-2731-4	SW01	Total/NA	Solid	8015 NM	
890-2731-5	SW02	Total/NA	Solid	8015 NM	
890-2731-6	SW03	Total/NA	Solid	8015 NM	
890-2731-7	SW04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 31858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2731-1	FS01	Soluble	Solid	DI Leach	
890-2731-2	FS02	Soluble	Solid	DI Leach	
890-2731-3	FS03	Soluble	Solid	DI Leach	
890-2731-4	SW01	Soluble	Solid	DI Leach	
890-2731-5	SW02	Soluble	Solid	DI Leach	
890-2731-6	SW03	Soluble	Solid	DI Leach	
890-2731-7	SW04	Soluble	Solid	DI Leach	
MB 880-31858/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31858/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

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### **QC Association Summary**

Client: Ensolum
Project/Site: Goldenchild CTB
Job ID: 890-2731-1
SDG: 03E1558018

**HPLC/IC** (Continued)

### Leach Batch: 31858 (Continued)

Lab Sample ID LCSD 880-31858/3-A	Client Sample ID Lab Control Sample Dup	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
880-17809-A-1-D MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17809-A-1-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2732-A-1-F MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2732-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 31926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2731-1	FS01	Soluble	Solid	300.0	31858
890-2731-2	FS02	Soluble	Solid	300.0	31858
890-2731-3	FS03	Soluble	Solid	300.0	31858
890-2731-4	SW01	Soluble	Solid	300.0	31858
890-2731-5	SW02	Soluble	Solid	300.0	31858
890-2731-6	SW03	Soluble	Solid	300.0	31858
890-2731-7	SW04	Soluble	Solid	300.0	31858
MB 880-31858/1-A	Method Blank	Soluble	Solid	300.0	31858
LCS 880-31858/2-A	Lab Control Sample	Soluble	Solid	300.0	31858
LCSD 880-31858/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31858
880-17809-A-1-D MS	Matrix Spike	Soluble	Solid	300.0	31858
880-17809-A-1-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31858
890-2732-A-1-F MS	Matrix Spike	Soluble	Solid	300.0	31858
890-2732-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31858

Job ID: 890-2731-1

Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558018

**Client Sample ID: FS01** Lab Sample ID: 890-2731-1

Date Collected: 08/04/22 13:00 **Matrix: Solid** Date Received: 08/05/22 11:08

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	31861	08/09/22 15:47	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32007	08/11/22 19:09	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32078	08/12/22 10:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			31838	08/09/22 09:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	31770	08/08/22 14:08	DM	EET MID
Total/NA	Analysis	8015B NM		1			31670	08/09/22 03:13	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	31858	08/09/22 15:40	AJ	EET MID
Soluble	Analysis	300.0		1			31926	08/17/22 15:57	CH	EET MID

**Client Sample ID: FS02** Lab Sample ID: 890-2731-2

Date Collected: 08/04/22 13:05 Matrix: Solid Date Received: 08/05/22 11:08

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Prep 5035 31861 Total/NA 5.01 g 5 mL 08/09/22 15:47 MR EET MID Total/NA 8021B 5 mL 32007 08/11/22 19:30 **EET MID** Analysis 1 5 mL SM Total/NA Total BTEX 32078 08/12/22 10:15 SM Analysis 1 **EET MID** Total/NA Analysis 8015 NM 31838 08/09/22 09:31 SM **EET MID** Total/NA 31770 Prep 8015NM Prep 10.02 g 08/08/22 14:08 DM EET MID 10 mL Total/NA Analysis 8015B NM 31670 08/09/22 03:34 SM **EET MID** Soluble 08/09/22 15:40 Leach DI Leach 4.99 g 50 mL 31858 ΑJ **EET MID** 

**Client Sample ID: FS03** Lab Sample ID: 890-2731-3

31926

08/17/22 16:05

СН

Date Collected: 08/04/22 14:00 Date Received: 08/05/22 11:08

Analysis

300.0

Soluble

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	31861	08/09/22 15:47	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32007	08/11/22 21:21	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32078	08/12/22 10:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			31838	08/09/22 09:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	31770	08/08/22 14:08	DM	EET MID
Total/NA	Analysis	8015B NM		1			31670	08/09/22 03:55	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	31858	08/09/22 15:40	AJ	EET MID
Soluble	Analysis	300.0		1			31926	08/17/22 16:28	CH	EET MID

Lab Sample ID: 890-2731-4 **Client Sample ID: SW01** 

Date Collected: 08/04/22 13:30 Matrix: Solid Date Received: 08/05/22 11:08

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	31861	08/09/22 15:47	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32007	08/11/22 21:41	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32078	08/12/22 10:15	SM	EET MID

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**Matrix: Solid** 

**EET MID** 

### Lab Chronicle

Client: EnsolumJob ID: 890-2731-1Project/Site: Goldenchild CTBSDG: 03E1558018

Client Sample ID: SW01
Date Collected: 08/04/22 13:30

Lab Sample ID: 890-2731-4

Matrix: Solid

Date Received: 08/05/22 11:08

Batch Batch

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			31838	08/09/22 09:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	31770	08/08/22 14:08	DM	EET MID
Total/NA	Analysis	8015B NM		1			31670	08/09/22 04:16	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	31858	08/09/22 15:40	AJ	EET MID
Soluble	Analysis	300.0		5			31926	08/17/22 16:36	CH	EET MID

Client Sample ID: SW02 Lab Sample ID: 890-2731-5

Date Collected: 08/04/22 13:45

Date Received: 08/05/22 11:08

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Prep Type Method Amount Amount Number or Analyzed Type Run Factor Analyst Lab 31861 Total/NA 5035 Prep 4.97 g 5 mL 08/09/22 15:47 MR **EET MID** Total/NA Analysis 8021B 5 mL 5 mL 32007 08/11/22 22:02 SM **EET MID** 1 Total/NA Total BTEX 32078 **EET MID** Analysis 1 08/12/22 10:15 SM Total/NA Analysis 8015 NM 31838 08/09/22 09:31 SM **EET MID** Total/NA Prep 8015NM Prep 10.02 g 10 mL 31770 08/08/22 14:08 DM **EET MID** Total/NA Analysis 8015B NM 31670 08/09/22 04:37 SM **EET MID** Soluble Leach DI Leach 5 g 50 mL 31858 08/09/22 15:40 ΑJ **EET MID** Soluble Analysis 300.0 1 31926 08/17/22 16:44 СН **EET MID** 

Client Sample ID: SW03 Lab Sample ID: 890-2731-6

Date Collected: 08/04/22 13:48 Matrix: Solid
Date Received: 08/05/22 11:08

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	31861	08/09/22 15:47	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32007	08/11/22 22:22	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32078	08/12/22 10:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			31838	08/09/22 09:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	31770	08/08/22 14:08	DM	EET MID
Total/NA	Analysis	8015B NM		1			31670	08/09/22 04:58	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	31858	08/09/22 15:40	AJ	EET MID
Soluble	Analysis	300.0		1			31926	08/17/22 16:52	CH	EET MID

Client Sample ID: SW04 Lab Sample ID: 890-2731-7

Date Collected: 08/04/22 13:50

Date Received: 08/05/22 11:08

Matrix: Solid

=	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	31861	08/09/22 15:47	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32007	08/11/22 22:43	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32078	08/12/22 10:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			31838	08/09/22 09:31	SM	EET MID
Total/NA Total/NA	Prep Analysis	8015NM Prep 8015B NM		1	10.04 g	10 mL	31770 31670	08/08/22 14:08 08/09/22 05:20	DM SM	EET MID

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Released to Imaging: 4/20/2023 7:34:48 AM

### Lab Chronicle

Client: Ensolum Job ID: 890-2731-1
Project/Site: Goldenchild CTB SDG: 03E1558018

Client Sample ID: SW04 Lab Sample ID: 890-2731-7

Date Collected: 08/04/22 13:50

Date Received: 08/05/22 11:08

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.96 g	50 mL	31858	08/09/22 15:40	AJ	EET MID
Soluble	Analysis	300.0		1			31926	08/17/22 17:00	CH	EET MID

### Laboratory References:

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

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### **Accreditation/Certification Summary**

Client: Ensolum
Project/Site: Goldenchild CTB
Job ID: 890-2731-1
SDG: 03E1558018

Laboratory: Eurofins Midland

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

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>
Texas	NE	ELAP	T104704400-22-24	06-30-23
The following analytes	are included in this report, bu	it the laboratory is not certific	ed by the governing authority. This list ma	av include analytes for
the agency does not of	fer certification.	•	, , ,	·, ·····
the agency does not of Analysis Method	fer certification .  Prep Method	Matrix	Analyte	,
0 ,		Matrix Solid	, , ,	

### **Method Summary**

Job ID: 890-2731-1 Client: Ensolum Project/Site: Goldenchild CTB

SDG: 03E1558018

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

**Eurofins Carlsbad** 

Released to Imaging: 4/20/2023 7:34:48 AM

### **Sample Summary**

Client: Ensolum

Project/Site: Goldenchild CTB

Job ID: 890-2731-1

SDG: 03E1558018

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2731-1	FS01	Solid	08/04/22 13:00	08/05/22 11:08	7'
890-2731-2	FS02	Solid	08/04/22 13:05	08/05/22 11:08	7'
890-2731-3	FS03	Solid	08/04/22 14:00	08/05/22 11:08	7'
890-2731-4	SW01	Solid	08/04/22 13:30	08/05/22 11:08	0-7'
890-2731-5	SW02	Solid	08/04/22 13:45	08/05/22 11:08	0-7'
890-2731-6	SW03	Solid	08/04/22 13:48	08/05/22 11:08	0-7'
890-2731-7	SW04	Solid	08/04/22 13:50	08/05/22 11:08	0-1'

eurofins 🔆 **Environment Testing** 

Company Name:

Ensolum Josh Adams

Address:

Project Manager:

Carlsbad, NM 88220 3122 National Parks Hwy

Address: City, State ZIP:

Carlsbad, NM 88220 3104 E. Green Street XTO Energy, Inc.

State of Project:

|Program: UST/PST [] PRP [] Brownfields [] RRC [] Superfund []

Level IV

**Work Order Comments** 

www.xenco.com

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Company Name: Bill to: (if different)

Garrett Green

# Chain of Custody

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

Work Order No:

Revised Date: 08/25/2020 Rev. 2020 2		03	6								
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ons ntrol potated.	rs. It assigns standard terms and conditions are due to circumstances beyond the control ms will be enforced unless previously negotiat	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. Eurofine 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 Eurofine 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.	Eurofins Xen or expenses in to Eurofins X	npany to losses o ubmitted	client cor y for any sample s	se order from one of \$5 for each to	tes a valid purcha all not assume ar ect and a charge	f samples constitution of samples and shippiled to each proj	quishment o / for the cost 5.00 will be a	ument and relin will be liable only um charge of \$8	tice: Signature of this doc service. Eurofins Xenco v Eurofins Xenco. A minim
Hg: 1631 / 245.1 / 7470 / 7471	Ag TI U Hg:	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag	Ba Be Co	b As	ŘA s	6010: 8RC	CLP / SPLP	ed	be analyz	Metal(s) to	Circle Method(s) and Metal(s) to be analyzed
iO2 Na Sr TI Sn U V Zn	Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na	Cd Ca Cr Co Cu Fe Pb Mg N	Ba Be B	Sb As E	Al St	Texas 11	RA 13PPM	8RCRA	6020:	200.8 / 6020:	Total 200.7 / 6010
							-				
Cost Center: 105575001											
			×	×		Comp	1350 0-1'	8/4/2022	S		SW04
			×	×	_	Comp	1348 0-7	8/4/2022	S		SW03
			×	×	-	Comp	1345 0-7'	8/4/2022	S		SW02
NAPP2101331137			×	×		Comp	1330 0-7	8/4/2022	S		SW01
NAPP2101355437, &			×	×	_	Comp	1400 7	8/4/2022	S		FS03
NAPP2102237559,			×	×		Comp	1305 7'	8/4/2022	S		FS02
NAPP2035526230			×	×	-	Comp	1300 7'	8/4/2022	S		FS01
Sample Comments			TPH (8	CHLOR	# of Cont	Grab/ Comp	Time Depth	Date Sampled Sa	Matrix	ication	Sample Identification
NaOH+Ascorbic Acid: SAPC		_				(J)		Corrected Temperature:	_		Total Containers:
Zn Acetate+NaOH: Zn	_	890-2731 Circuit	1	S (E		5.4	-	Temperature Reading:	NO NIA	Yes N	Sample Custody Seals:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ; NaSO <sub>3</sub>		Chain of Custody		PA:		り 2)		Correction Factor:	NO AVA	Yes N	Cooler Custody Seals:
NaHSO4: NABIS				300		TOO!	7	Thermometer ID:	No	ct: Yes	Samples Received Intact:
H <sub>3</sub> PO <sub>4</sub> : HP				.0)	nete	Yes No	Wet Ice:	Yes No V	Temp Blank:		SAMPLE RECEIPT
H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na					ers	by 4:30pm	the lab, if received by 4:30pm	the	N/A		PO#:
			_			eceived by	TAT starts the day received by	TA	Liz Cheli	_	Sampler's Name:
2	_						Due Date:		Eddy County, NM	Eddy	Project Location:
None: NO DI Water: H <sub>2</sub> O				-	Code	Rush	☑ Routine □	<b>S</b>	03E1558018	03E	Project Number:
Preservative Codes	T	ANALYSIS REQUEST			_		Turn Around	œί	Goldenchild CTB	Golde	Project Name:
ADaP - Comer:	Deliverables: EDD [_]	Deliv			ım.con	ms@ensolı	Email: jadams@ensolum.com			3035178437	Phone: 30
			Carisbad, NM 88220	arisbad	<u></u>	City, State ZIP:	City,		88220	Carlsbad, NM 88220	City, State ZIP: C
Reporting: Level	ntina: I evel II   I evel III			4-1-	_		2		1		

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2731-1 SDG Number: 03E1558018

Login Number: 2731 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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

### **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-2731-1 SDG Number: 03E1558018

Login Number: 2731 **List Source: Eurofins Midland** List Number: 2

List Creation: 08/08/22 08:34 AM

Creator: Rodriguez, Leticia

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

<6mm (1/4").



### **Environment Testing America**

### **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2715-1

Laboratory Sample Delivery Group: 03E1558018

Client Project/Site: Goldenchild CTB

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

RAMER

Authorized for release by: 8/12/2022 8:00:44 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum
Project/Site: Goldenchild CTB
Laboratory Job ID: 890-2715-1
SDG: 03E1558018

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### **Definitions/Glossary**

Client: Ensolum Job ID: 890-2715-1 Project/Site: Goldenchild CTB

SDG: 03E1558018

### **Qualifiers**

### **GC VOA**

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

### GC Semi VOA

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

### **HPLC/IC**

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

### **Glossary**

DL, RA, RE, IN

NC

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)

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 Limi

ND	Not Detected at the reporting I	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

Not Calculated

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: Goldenchild CTB

Job ID: 890-2715-1 SDG: 03E1558018

Job ID: 890-2715-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2715-1

### Receipt

The sample was received on 8/3/2022 8:41 AM. 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 5.8°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: (890-2706-A-1-A), (890-2706-A-1-B MS) and (890-2706-A-1-C MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31555 and analytical batch 880-31531 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31559 and analytical batch 880-31937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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Matrix: Solid

### **Client Sample Results**

Client: Ensolum

Project/Site: Goldenchild CTB

Job ID: 890-2715-1

SDG: 03E1558018

Client Sample ID: FS13 Lab Sample ID: 890-2715-1

Date Collected: 08/02/22 14:50
Date Received: 08/03/22 08:41

Sample Depth: 9'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00201	U	0.00201	mg/Kg		08/09/22 08:41	08/10/22 12:20	
Toluene	<0.00201	U	0.00201	mg/Kg		08/09/22 08:41	08/10/22 12:20	
Ethylbenzene	0.00299		0.00201	mg/Kg		08/09/22 08:41	08/10/22 12:20	
m-Xylene & p-Xylene	0.00955		0.00402	mg/Kg		08/09/22 08:41	08/10/22 12:20	
o-Xylene	0.00698		0.00201	mg/Kg		08/09/22 08:41	08/10/22 12:20	
Xylenes, Total	0.0165		0.00402	mg/Kg		08/09/22 08:41	08/10/22 12:20	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Bromofluorobenzene (Surr)			70 - 130			08/09/22 08:41	08/10/22 12:20	
1,4-Difluorobenzene (Surr)	90		70 - 130			08/09/22 08:41	08/10/22 12:20	
Method: Total BTEX - Total BTE	EX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	0.0195		0.00402	mg/Kg			08/10/22 16:51	
Method: 8015 NM - Diesel Rang	ge Organics (DR	O) (GC)						
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	639		49.8	mg/Kg			08/08/22 11:58	
Method: 8015B NM - Diesel Rar	nge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		08/05/22 09:50	08/06/22 00:46	
Diesel Range Organics (Over	566		49.8	mg/Kg		08/05/22 09:50	08/06/22 00:46	
C10-C28)								
Oll Range Organics (Over	72.7		49.8	mg/Kg		08/05/22 09:50	08/06/22 00:46	
Oll Range Organics (Over C28-C36)	72.7 %Recovery	Qualifier	49.8	mg/Kg		08/05/22 09:50  Prepared	08/06/22 00:46  Analyzed	
Oll Range Organics (Over C28-C36) Surrogate		Qualifier		mg/Kg				Dil Fa
Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	%Recovery	Qualifier	Limits	mg/Kg		Prepared	Analyzed	Dil Fa
C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl Method: 300.0 - Anions, Ion Ch	%Recovery 72 84		Limits 	mg/Kg		Prepared 08/05/22 09:50	Analyzed 08/06/22 00:46	Dil Fa
Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	%Recovery 72 84 romatography -		Limits 	mg/Kg Unit	D	Prepared 08/05/22 09:50	Analyzed 08/06/22 00:46	Dil Fa

### **Surrogate Summary**

Job ID: 890-2715-1 Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558018

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-17597-A-2-F MS	Matrix Spike	96	103
880-17597-A-2-G MSD	Matrix Spike Duplicate	112	95
890-2715-1	FS13	113	90
LCS 880-31834/1-A	Lab Control Sample	99	108
LCSD 880-31834/2-A	Lab Control Sample Dup	114	102
MB 880-31717/5-A	Method Blank	96	95
MB 880-31834/5-A	Method Blank	98	93

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

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

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

				Percent Surrogate Reco
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2706-A-1-B MS	Matrix Spike	68 S1-	67 S1-	
890-2706-A-1-C MSD	Matrix Spike Duplicate	63 S1-	65 S1-	
890-2715-1	FS13	72	84	
LCS 880-31555/2-A	Lab Control Sample	89	96	
LCSD 880-31555/3-A	Lab Control Sample Dup	89	97	
MB 880-31555/1-A	Method Blank	83	101	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2715-1 SDG: 03E1558018 Project/Site: Goldenchild CTB

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31717/5-A

**Matrix: Solid** 

**Analysis Batch: 31851** 

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 31717

III D											
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa		
	Benzene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06			
	Toluene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06			
	Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06			
	m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/08/22 10:13	08/09/22 16:06			
	o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06			
	Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/08/22 10:13	08/09/22 16:06			

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Surrogate	%Recovery 0	Qualifier Limits	Prepared
4-Bromofluorobenzene (Surr)	96	70 - 130	08/08/22 10:13
1,4-Difluorobenzene (Surr)	95	70 - 130	08/08/22 10:13

Client Sample ID: Method Blank

Analyzed

08/09/22 16:06

08/09/22 16:06

Prep Type: Total/NA Prep Batch: 31834

Matrix: Solid

Analysis Batch: 31851

Lab Sample ID: MB 880-31834/5-A

	MB	MR							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 02:52	1	
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 02:52	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 02:52	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/09/22 08:41	08/10/22 02:52	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 02:52	1	
Xvlenes Total	<0.00400	H	0.00400	ma/Ka		08/09/22 08:41	08/10/22 02:52	1	

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130		08/09/22 08:41	08/10/22 02:52	1
1,4-Difluorobenzene (Surr)	93		70 - 130	C	08/09/22 08:41	08/10/22 02:52	1

Lab Sample ID: LCS 880-31834/1-A

**Matrix: Solid** 

Analysis Batch: 31851

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

Prep Batch: 31834

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1002		mg/Kg		100	70 - 130	
Toluene	0.100	0.09582		mg/Kg		96	70 - 130	
Ethylbenzene	0.100	0.07829		mg/Kg		78	70 - 130	
m-Xylene & p-Xylene	0.200	0.1630		mg/Kg		82	70 - 130	
o-Xylene	0.100	0.08318		mg/Kg		83	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	99	70 _ 130
1.4-Difluorobenzene (Surr)	108	70 - 130

Lab Sample ID: LCSD 880-31834/2-A

**Matrix: Solid** 

Analysis Batch: 31851

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

Prep Batch: 31834

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08862		mg/Kg		89	70 - 130	12	35

**Eurofins Carlsbad** 

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### QC Sample Results

Client: Ensolum Job ID: 890-2715-1 Project/Site: Goldenchild CTB SDG: 03E1558018

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

Lab Sample ID: LCSD 880-31834/2-A

**Matrix: Solid** Analysis Batch: 31851 Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 31834

Spike	LCSD	LCSD				%Rec		RPD
Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
0.100	0.1079	-	mg/Kg		108	70 - 130	12	35
0.100	0.09720		mg/Kg		97	70 - 130	22	35
0.200	0.2134		mg/Kg		107	70 - 130	27	35
0.100	0.1062		mg/Kg		106	70 - 130	24	35
	Added 0.100 0.100 0.200	Added         Result           0.100         0.1079           0.100         0.09720           0.200         0.2134	Added         Result         Qualifier           0.100         0.1079           0.100         0.09720           0.200         0.2134	Added         Result         Qualifier         Unit           0.100         0.1079         mg/Kg           0.100         0.09720         mg/Kg           0.200         0.2134         mg/Kg	Added         Result         Qualifier         Unit         D           0.100         0.1079         mg/Kg           0.100         0.09720         mg/Kg           0.200         0.2134         mg/Kg	Added         Result         Qualifier         Unit         D         %Rec           0.100         0.1079         mg/Kg         108           0.100         0.09720         mg/Kg         97           0.200         0.2134         mg/Kg         107	Added         Result 0.100         Qualifier 0.1079         Unit mg/Kg         D wRec 1008         Limits 70 - 130           0.100         0.1079         mg/Kg         108         70 - 130           0.100         0.09720         mg/Kg         97         70 - 130           0.200         0.2134         mg/Kg         107         70 - 130	Added         Result         Qualifier         Unit         D         %Rec         Limits         RPD           0.100         0.1079         mg/Kg         108         70 - 130         12           0.100         0.09720         mg/Kg         97         70 - 130         22           0.200         0.2134         mg/Kg         107         70 - 130         27

LCSD LCSD

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

Lab Sample ID: 880-17597-A-2-F MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

Analysis Batch: 31851

Prep Type: Total/NA

Prep Batch: 31834

MS MS %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Benzene 0.0998 0.1058 105 <0.00200 mg/Kg 70 - 130 Toluene <0.00200 0.0998 0.1035 104 70 - 130 U mg/Kg Ethylbenzene 0.0998 0.08434 70 - 130 <0.00200 mg/Kg 85 m-Xylene & p-Xylene <0.00399 U 0.200 0.1748 88 70 - 130 mg/Kg o-Xylene <0.00200 U 0.0998 0.08766 mg/Kg 87 70 - 130

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	96	70 - 130
1,4-Difluorobenzene (Surr)	103	70 - 130

Lab Sample ID: 880-17597-A-2-G MSD

**Matrix: Solid** 

**Analysis Batch: 31851** 

Client Sample ID: Matrix Spike Duplicate

70 - 130

101

Prep Type: Total/NA Prep Batch: 31834

16

35

Sample Sample MSD MSD %Rec RPD Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Benzene <0.00200 U 0.100 0.08278 mg/Kg 82 70 - 130 24 35 Toluene <0.00200 U 0.100 0.1051 mg/Kg 105 70 - 130 2 35 Ethylbenzene <0.00200 U 0.100 0.09458 mg/Kg 94 70 - 130 11 35 <0.00399 U 0.201 0.2062 70 - 130 m-Xylene & p-Xylene mg/Kg 103 16 35

0.1025

mg/Kg

0.100

MSD MSD

<0.00200 U

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	112	70 - 130
1,4-Difluorobenzene (Surr)	95	70 - 130

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

Lab Sample ID: MB 880-31555/1-A

**Matrix: Solid** 

o-Xylene

Analysis Batch: 31531

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

Prep Batch: 31555

мв мв Analyte Result Qualifier RL Unit Prepared Analyzed <50.0 U 50.0 mg/Kg 08/05/22 09:50 08/05/22 20:48 Gasoline Range Organics

(GRO)-C6-C10

Client: Ensolum Job ID: 890-2715-1 Project/Site: Goldenchild CTB

SDG: 03E1558018

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

Lab Sample ID: MB 880-31555/1-A **Matrix: Solid** 

Analysis Batch: 31531

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 31555

ı									
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
	Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
Т									

MB MB

MR MR

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130	08/05/22 09:50	08/05/22 20:48	1
o-Terphenyl	101		70 - 130	08/05/22 09:50	08/05/22 20:48	1

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 880-31555/2-A **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 31531 Prep Batch: 31555

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 885.3 89 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 874.1 mg/Kg 87 70 - 130

C10-C28)

LCS LCS Qualifier Limits Surrogate %Recovery 1-Chlorooctane 70 - 130 89 o-Terphenyl 96 70 - 130

Lab Sample ID: LCSD 880-31555/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 31531

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1000	855.1		mg/Kg		86	70 - 130	3	20
(GRO)-C6-C10									
Diesel Range Organics (Over	1000	871.0		mg/Kg		87	70 - 130	0	20
C10-C28)									

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	97		70 - 130

Lab Sample ID: 890-2706-A-1-B MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 31531									Pre	Batch: 31555
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<49.9	U	999	833.2		mg/Kg		81	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	92.2	F1	999	666.4	F1	mg/Kg		57	70 - 130	

C10-C28)

	IVIS	IVIS				
Surrogate	%Recovery	Qualifier	Limits			
1-Chlorooctane	68	S1-	70 - 130			
o-Terphenyl	67	S1-	70 - 130			

**Eurofins Carlsbad** 

Prep Type: Total/NA

Prep Batch: 31555

Lab Sample ID: 890-2706-A-1-C MSD

Client: Ensolum Job ID: 890-2715-1 Project/Site: Goldenchild CTB SDG: 03E1558018

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

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31555

Sample Sample Spike MSD MSD RPD Result Qualifier RPD Limit Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <49.9 U 999 850.8 mg/Kg 83 70 - 130 2 20 (GRO)-C6-C10 999 Diesel Range Organics (Over 92.2 F1 643.6 F1 mg/Kg 55 70 - 130 3

C10-C28)

**Matrix: Solid** 

Analysis Batch: 31531

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	63	S1-	70 - 130
o-Terphenyl	65	S1-	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31559/1-A Client Sample ID: Method Blank

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 31937** 

мв мв

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			08/12/22 03:46	1

Lab Sample ID: LCS 880-31559/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 31937** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	245.2		mg/Kg		98	90 - 110	

Lab Sample ID: LCSD 880-31559/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31937** 

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	247.1		mg/Kg		99	90 - 110	1	20	

Lab Sample ID: 890-2706-A-3-C MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31937** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	198	F1	250	448.2		ma/Ka		100	90 - 110	

Lab Sample ID: 890-2706-A-3-D MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 31937

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	198	F1	250	480.5	F1	mg/Kg		113	90 - 110	7	20

**Eurofins Carlsbad** 

**Prep Type: Soluble** 

### **QC Association Summary**

Client: Ensolum Job ID: 890-2715-1
Project/Site: Goldenchild CTB SDG: 03E1558018

**GC VOA** 

Prep Batch: 31717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31717/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 31834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
890-2715-1	FS13	Total/NA	Solid	5035	
MB 880-31834/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31834/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31834/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17597-A-2-F MS	Matrix Spike	Total/NA	Solid	5035	
880-17597-A-2-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2715-1	FS13	Total/NA	Solid	8021B	31834
MB 880-31717/5-A	Method Blank	Total/NA	Solid	8021B	31717
MB 880-31834/5-A	Method Blank	Total/NA	Solid	8021B	31834
LCS 880-31834/1-A	Lab Control Sample	Total/NA	Solid	8021B	31834
LCSD 880-31834/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31834
880-17597-A-2-F MS	Matrix Spike	Total/NA	Solid	8021B	31834
880-17597-A-2-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31834

**Analysis Batch: 31931** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2715-1	FS13	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

Analysis Batch: 31531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2715-1	FS13	Total/NA	Solid	8015B NM	31555
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015B NM	31555
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31555
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31555
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	31555
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31555

Prep Batch: 31555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2715-1	FS13	Total/NA	Solid	8015NM Prep	
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

**Analysis Batch: 31755** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2715-1	FS13	Total/NA	Solid	8015 NM	

### **QC Association Summary**

Client: Ensolum Job ID: 890-2715-1 Project/Site: Goldenchild CTB SDG: 03E1558018

HPLC/IC

Leach Batch: 31559

<b>Lab Sample ID</b> 890-2715-1	Client Sample ID FS13	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-31559/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

**Analysis Batch: 31937** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2715-1	FS13	Soluble	Solid	300.0	31559
MB 880-31559/1-A	Method Blank	Soluble	Solid	300.0	31559
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	300.0	31559
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31559
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	31559
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31559

### **Lab Chronicle**

Client: Ensolum Job ID: 890-2715-1 Project/Site: Goldenchild CTB SDG: 03E1558018

**Client Sample ID: FS13** 

Lab Sample ID: 890-2715-1

Matrix: Solid

Date Collected: 08/02/22 14:50 Date Received: 08/03/22 08:41

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	31834	08/09/22 08:41	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31851	08/10/22 12:20	MR	EET MID
Total/NA	Analysis	Total BTEX		1			31931	08/10/22 16:51	SM	EET MID
Total/NA	Analysis	8015 NM		1			31755	08/08/22 11:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	31555	08/05/22 09:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31531	08/06/22 00:46	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	31559	08/05/22 10:29	СН	EET MID
Soluble	Analysis	300.0		1			31937	08/12/22 08:04	AJ	EET MID

### **Laboratory References:**

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

### **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2715-1
Project/Site: Goldenchild CTB SDG: 03E1558018

### **Laboratory: Eurofins Midland**

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

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>
Texas	NI	ELAP	T104704400-22-24	06-30-23
The following analytes	are included in this report hi	it the laboratory is not certific	ed by the governing authority. This list ma	y include analytes for y
the agency does not of	. ,	it the laboratory is not contin	ou by the governing additionty. This list the	ay include analytes for t
0 ,	. ,	Matrix	Analyte	y include analytes for v
the agency does not of	fer certification.	•	, , ,	

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### **Method Summary**

Job ID: 890-2715-1 Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558018

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: Goldenchild CTB

Job ID: 890-2715-1

SDG: 03E1558018

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2715-1	FS13	Solid	08/02/22 14:50	08/03/22 08:41	9'

### eurofins 🔆 Xenco

Project Location Project Number: Project Name:

Coldenchild 03£1558018 Eddy County, NM

CTB

Turn Around

Rush

Code

817-683-2503

Email:

Kjennings @ ensolum.com

ANALYSIS REQUEST

МеОН: Ме DI Water: H<sub>2</sub>O Preservative Codes

312 Abtional arkback, NM

08220

City, State ZIP:

至

Address:

3104

E. breen St.

Carlsbood, NM 88220

Ensolum, Like

City, State ZIP: Address: ompany Name:

Solie

Jenning 5

Bill to: (if different)

Harren

Creen

Company Name:

**Environment Testing** 

## 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

Deliverables: EDD	Reporting: Level II   Level III   PST/UST   TRRP   Level IV	State of Project:	Program: UST/PST PRP Brownfields RRC Superfund	
	☐ Level III ☐		ST PRP	Work Orde
ADaPT 🗆 🔾	PST/UST 🗌		Brownfields 🗌	Work Order Comments
Other:	TRRP		RRC :	
	Level IV		Superfund 🗌	

Revised Date: 08/25/2020 Rev. 2020.2			6						
			2843	8.3.2284	~	0	fine (v		Gul Chilme
Date/Time	Received by: (Signature)	Relinquished by: (Signature)	me	Date/Time		Received by: (Signature)	Received by	ure) ^	Relinayished by: (Signature)
	ons rol egotiated.	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 iterms 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.	is affiliates and su by the client if su o, but not analyze	iurofins Xenco, it penses incurred to Eurofins Xenc	client company to it for any losses or ex sample submitted	id purchase order from sume any responsibility a charge of \$5 for each	es constitutes a va les and shall not as o each project and	relinquishment of samp only for the cost of samp of \$85.00 will be applied	ice: Signature of this document and ervice. Eurofins Xenco will be liable urofins Xenco. A minimum charge
7471	g Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Se Ag Tl U Hg: 1631/245.1/7470/7471	Cr Co Cu Fe Pb Mo O Cu Pb Mn Mo Ni	Be B Cd Ca a Be Cd Cr C	Sb As Ba Sb As Ba	exas 11 Al 010 : 8RCRA	8RCRA 13PPM Texas 11 Al Sb As Ba Be B TCLP/SPLP 6010: 8RCRA Sb As Ba Be C		200.8 / 6020: etal(s) to be ana	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed
UAPP 2101331137	NAT								
NAPP2101335437	NAF								
NAPP 2102237559	ZA								
NA PP 2035256230	NAF								
rident Number	In								
055 751001	105								
Cost Center:	Cost		X	X	dens	1450 9	8-2-2)	Soil	FS13
Sample Comments	Sa		T	cont 3	Grab/ Comp	Time Depth	Date Sampled	Matrix	Sample Identification
NaOH+Ascorbic Acid: SAPC			P	TE	0,00	nperature:	Corrected Temperature		Total Containers:
Zn Acetate+NaOH: Zn		890-2715 Chain of Custody	SI	ΞX	0	Reading:	Temperature Reading:	Yes No NIA	Sample Custody Seals:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ; NaSO <sub>3</sub>			-10		6.0		Correction Factor:	Yes No NIA	Cooler Custody Seals:
NaHSO 4: NABIS	NaHSO			( 8	FOO WA	_	Thermometer ID:	(Yes) No	Samples Received Intact:
HP	H <sub>3</sub> PO <sub>4</sub> : HP		301		Yes No	Wet Ice:	Ye No	Temp Blank:	SAMPLE RECEIPT
H <sub>2</sub> NaOH: Na	H <sub>2</sub> 50 <sub>4</sub> : H <sub>2</sub>		5)	31)		the lab, if received by 4:30pm			PO #:
HNO 3: HN	HCL: HC		20.		ceived by	TAT starts the day received by		an Adams	
MeOH: Me	Cool:(Coo)		0)			Due Date:	_	Eddy County, NA	Project Location:

Work Order No:

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2715-1 SDG Number: 03E1558018

Login Number: 2715 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2715-1 SDG Number: 03E1558018

> List Source: Eurofins Midland List Creation: 08/04/22 10:22 AM

List Number: 2 Creator: Rodriguez, Leticia

Login Number: 2715

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	N/A	

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**O** 

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<6mm (1/4").

**Environment Testing America** 

### **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2716-1

Laboratory Sample Delivery Group: 03E1558018

Client Project/Site: Goldenchild CTB

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

RAMER

Authorized for release by: 8/12/2022 8:00:52 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum
Project/Site: Goldenchild CTB
Laboratory Job ID: 890-2716-1
SDG: 03E1558018

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### **Definitions/Glossary**

Job ID: 890-2716-1 Client: Ensolum Project/Site: Goldenchild CTB

SDG: 03E1558018

### **Qualifiers**

**GC VOA** 

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

**GC Semi VOA** 

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

HPLC/IC

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

**Glossary** 

%R

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

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

Decision Level Concentration (Radiochemistry) DLC

EDL Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA Minimum Detectable Concentration (Radiochemistry) MDC

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** 

Presumptive **PRES** QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TFO

**TNTC** Too Numerous To Count

### Case Narrative

Client: Ensolum

Project/Site: Goldenchild CTB

Job ID: 890-2716-1

SDG: 03E1558018

Job ID: 890-2716-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2716-1

### Receipt

The sample was received on 8/3/2022 8:41 AM. 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 5.8°C

### GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: (LCS 880-31767/1-A) and (LCSD 880-31767/2-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-2704-A-1-I MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SW39 (890-2716-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-31767 and analytical batch 880-31850 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

### GC Semi VOA

Method 8015MOD NM: Surrogate recovery for the following samples were outside control limits: (890-2706-A-1-A), (890-2706-A-1-B MS) and (890-2706-A-1-C MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31555 and analytical batch 880-31531 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

### HPLC/IC

Method 300 ORGFM 28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31559 and analytical batch 880-31937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

### **Client Sample Results**

Client: Ensolum Job ID: 890-2716-1
Project/Site: Goldenchild CTB SDG: 03E1558018

Client Sample ID: SW39

Lab Sample ID: 890-2716-1

Date Collected: 08/02/22 14:55

Date Received: 08/03/22 08:41

Matrix: Solid

Sample Depth: 0-9'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		08/08/22 13:00	08/10/22 17:20	
Toluene	<0.00202	U	0.00202	mg/Kg		08/08/22 13:00	08/10/22 17:20	
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		08/08/22 13:00	08/10/22 17:20	
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		08/08/22 13:00	08/10/22 17:20	
o-Xylene	<0.00202	U	0.00202	mg/Kg		08/08/22 13:00	08/10/22 17:20	•
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		08/08/22 13:00	08/10/22 17:20	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	145	S1+	70 - 130			08/08/22 13:00	08/10/22 17:20	
1,4-Difluorobenzene (Surr)	75		70 - 130			08/08/22 13:00	08/10/22 17:20	
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00403	U	0.00403	mg/Kg			08/11/22 11:16	
Method: 8015 NM - Diesel Rang	je Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	537		50.0	mg/Kg			08/08/22 11:58	
Method: 8015B NM - Diesel Rar	nge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/06/22 01:08	
Diesel Range Organics (Over C10-C28)	466		50.0	mg/Kg		08/05/22 09:50	08/06/22 01:08	,
Oll Range Organics (Over C28-C36)	71.2		50.0	mg/Kg		08/05/22 09:50	08/06/22 01:08	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	89		70 - 130			08/05/22 09:50	08/06/22 01:08	
o-Terphenyl	101		70 - 130			08/05/22 09:50	08/06/22 01:08	
Method: 300.0 - Anions, Ion Ch	romatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.1		4.96	mg/Kg			08/12/22 08:14	

### **Surrogate Summary**

Job ID: 890-2716-1 Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558018

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-2704-A-1-H MS	Matrix Spike	130	85
890-2704-A-1-I MSD	Matrix Spike Duplicate	140 S1+	84
890-2716-1	SW39	145 S1+	75
LCS 880-31767/1-A	Lab Control Sample	136 S1+	81
LCSD 880-31767/2-A	Lab Control Sample Dup	131 S1+	84
MB 880-31767/5-A	Method Blank	103	75
MB 880-31850/8	Method Blank	99	77

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

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

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2706-A-1-B MS	Matrix Spike	68 S1-	67 S1-	
390-2706-A-1-C MSD	Matrix Spike Duplicate	63 S1-	65 S1-	
390-2716-1	SW39	89	101	
.CS 880-31555/2-A	Lab Control Sample	89	96	
CSD 880-31555/3-A	Lab Control Sample Dup	89	97	
MB 880-31555/1-A	Method Blank	83	101	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

1

#### QC Sample Results

Client: Ensolum Job ID: 890-2716-1 Project/Site: Goldenchild CTB SDG: 03E1558018

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31767/5-A

Lab Sample ID: LCS 880-31767/1-A

**Matrix: Solid** Analysis Batch: 31850 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31767

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 06:38	
Toluene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 06:38	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 06:38	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/08/22 13:00	08/10/22 06:38	
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 06:38	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/08/22 13:00	08/10/22 06:38	

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	 08/08/22 13:00	08/10/22 06:38	1
1.4-Difluorobenzene (Surr)	75		70 - 130	08/08/22 13:00	08/10/22 06:38	1

**Client Sample ID: Lab Control Sample** 

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

Prep Type: Total/NA

Prep Batch: 31767

Prep Type: Total/NA

**Matrix: Solid** Analysis Batch: 31850 Prep Batch: 31767

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08434		mg/Kg		84	70 - 130	
Toluene	0.100	0.08825		mg/Kg		88	70 - 130	
Ethylbenzene	0.100	0.08741		mg/Kg		87	70 - 130	
m-Xylene & p-Xylene	0.200	0.1767		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.09757		mg/Kg		98	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	136	S1+	70 - 130
1,4-Difluorobenzene (Surr)	81		70 - 130

Lab Sample ID: LCSD 880-31767/2-A

**Matrix: Solid Analysis Batch: 31850** 

LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits Limit 0.08734 Benzene 0.100 mg/Kg 87 70 - 130 35 Toluene 0.100 0.08876 mg/Kg 89 70 - 130 35 Ethylbenzene 0.100 0.08917 mg/Kg 89 70 - 130 35 m-Xylene & p-Xylene 0.200 0.1831 mg/Kg 92 70 - 130 35 0.100 0.09964 o-Xylene mg/Kg 100 70 - 130 35

LCSD LCSD

<0.00199 U

Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	131	S1+	70 - 130		
1 4-Difluorobenzene (Surr)	84		70 - 130		

Lab Sample ID: 890-2704-A-1-H MS

Matrix: Solid

Toluene

Matrix: Solid									Prep '	Type: Total/NA	
Analysis Batch: 31850						Prep Batch: 31767					
	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Benzene	<0.00199	U F1	0.100	0.09552		mg/Kg		95	70 - 130		

0.09509

mg/Kg

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Client Sample ID: Matrix Spike

70 - 130

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0.100

Client: Ensolum Job ID: 890-2716-1 Project/Site: Goldenchild CTB SDG: 03E1558018

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

Lab Sample ID: 890-2704-A-1-H MS

**Matrix: Solid** 

Analysis Batch: 31850

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31767

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene < 0.00199 U 0.100 0.09336 93 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00398 0.201 0.1888 mg/Kg 94 70 - 130 0.100 o-Xylene <0.00199 U 0.1014 101 70 - 130 mg/Kg

MS MS

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

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31767

Lab Sample ID: 890-2704-A-1-I MSD **Matrix: Solid** 

**Analysis Batch: 31850** 

-	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00199	U F1	0.0998	0.06812	F1	mg/Kg		68	70 - 130	33	35
Toluene	<0.00199	U	0.0998	0.07008		mg/Kg		70	70 - 130	30	35
Ethylbenzene	<0.00199	U	0.0998	0.07097		mg/Kg		71	70 - 130	27	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1453		mg/Kg		73	70 - 130	26	35
o-Xylene	<0.00199	U	0.0998	0.08021		mg/Kg		80	70 - 130	23	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	140	S1+	70 - 130		
1,4-Difluorobenzene (Surr)	84		70 - 130		

Lab Sample ID: MB 880-31850/8

**Matrix: Solid** 

o-Xylene

Xylenes, Total

Analysis Batch: 31850

Client Sample ID	D: Method Blank
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08/09/22 16:48

08/09/22 16:48

Prep Type: Total/NA

Result Qualifier Analyte Unit Prepared Dil Fac RL D Analyzed Benzene <0.00200 U 0.00200 mg/Kg 08/09/22 16:48 Toluene <0.00200 U 0.00200 mg/Kg 08/09/22 16:48 Ethylbenzene <0.00200 U 0.00200 mg/Kg 08/09/22 16:48 m-Xylene & p-Xylene <0.00400 U 0.00400 mg/Kg 08/09/22 16:48

MB MB

мв мв

<0.00200 U

<0.00400 U

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130		08/09/22 16:48	1
1,4-Difluorobenzene (Surr)	77		70 - 130		08/09/22 16:48	1

0.00200

0.00400

mg/Kg

mg/Kg

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

Lab Sample ID: MB 880-31555/1-A

**Matrix: Solid** 

Analysis Batch: 31531

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

Prep Batch: 31555

Analyte Result Qualifier RL Unit Prepared <50.0 U 50.0 mg/Kg 08/05/22 09:50 08/05/22 20:48 Gasoline Range Organics (GRO)-C6-C10

Client: Ensolum Job ID: 890-2716-1 SDG: 03E1558018 Project/Site: Goldenchild CTB

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

Lab Sample ID: MB 880-31555/1-A **Matrix: Solid** 

Lab Sample ID: LCS 880-31555/2-A

**Analysis Batch: 31531** 

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

Prep Batch: 31555

Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
	<50.0		<50.0 U 50.0	<50.0 U 50.0 mg/Kg	<50.0 U 50.0 mg/Kg	<50.0 U 50.0 mg/Kg 08/05/22 09:50	<50.0 U 50.0 mg/Kg 08/05/22 09:50 08/05/22 20:48

MB MB

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130	08/05/22 09:50	08/05/22 20:48	1
o-Terphenyl	101		70 - 130	08/05/22 09:50	08/05/22 20:48	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 31555

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 885.3 mg/Kg 89 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 1000 874.1 70 - 130 mg/Kg 87 C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	96		70 - 130

Lab Sample ID: LCSD 880-31555/3-A

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 31531

Analysis Batch: 31531

Client Sample ID: Lab Control Sample Du
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Prep Type: Total/NA Prep Batch: 31555

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	855.1		mg/Kg		86	70 - 130	3	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	871.0		mg/Kg		87	70 - 130	0	20	
C10-C28)										

	LCSD LCS	SD
Surrogate	%Recovery Qua	alifier Limits
1-Chlorooctane	89	70 - 130
o-Terphenyl	97	70 - 130

Lab Sample ID: 890-2706-A-1-B MS

**Matrix: Solid** 

Analysis Batch: 31531

Client Sample ID: Matrix Spike

Prep Type: Total/NA Prep Batch: 31555

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	833.2		mg/Kg		81	70 - 130
Diesel Range Organics (Over	92.2	F1	999	666.4	F1	mg/Kg		57	70 - 130

C10-C28)

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	68	S1-	70 - 130
o-Terphenyl	67	S1-	70 - 130

Client: Ensolum Job ID: 890-2716-1 Project/Site: Goldenchild CTB SDG: 03E1558018

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

Lab Sample ID: 890-2706-A-1-C MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** Analysis Batch: 31531 Prep Type: Total/NA Prep Batch: 31555

Sample Sample Spike MSD MSD RPD Result Qualifier RPD Limit Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <49.9 U 999 850.8 mg/Kg 83 70 - 130 2 20 (GRO)-C6-C10 999 Diesel Range Organics (Over 92.2 F1 643.6 F1 mg/Kg 55 70 - 130 3

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	63	S1-	70 - 130
o-Terphenyl	65	S1-	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31559/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31937** 

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Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			08/12/22 03:46	1

Lab Sample ID: LCS 880-31559/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31937** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	245.2		mg/Kg		98	90 - 110	 

Lab Sample ID: LCSD 880-31559/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 31937

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	247.1		mg/Kg		99	90 - 110	1	20	

Lab Sample ID: 890-2706-A-3-C MS

**Matrix: Solid** 

Analysis Batch: 31937

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	198	F1	250	448.2		ma/Ka		100	90 - 110	

Lab Sample ID: 890-2706-A-3-D MSD

**Matrix: Solid** 

Analysis Ratch: 31937

Alialysis Dalcii. 31331											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	198	F1	250	480.5	F1	mg/Kg		113	90 - 110	7	20

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**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

#### **QC Association Summary**

Client: Ensolum Job ID: 890-2716-1
Project/Site: Goldenchild CTB SDG: 03E1558018

**GC VOA** 

Prep Batch: 31767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2716-1	SW39	Total/NA	Solid	5035	
MB 880-31767/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31767/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31767/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2704-A-1-H MS	Matrix Spike	Total/NA	Solid	5035	
890-2704-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2716-1	SW39	Total/NA	Solid	8021B	31767
MB 880-31767/5-A	Method Blank	Total/NA	Solid	8021B	31767
MB 880-31850/8	Method Blank	Total/NA	Solid	8021B	
LCS 880-31767/1-A	Lab Control Sample	Total/NA	Solid	8021B	31767
LCSD 880-31767/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31767
890-2704-A-1-H MS	Matrix Spike	Total/NA	Solid	8021B	31767
890-2704-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31767

**Analysis Batch: 31998** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2716-1	SW39	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Analysis Batch: 31531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2716-1	SW39	Total/NA	Solid	8015B NM	31555
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015B NM	31555
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31555
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31555
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	31555
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31555

#### Prep Batch: 31555

<b>Lab Sample ID</b> 890-2716-1	Client Sample ID SW39	Prep Type Total/NA	Matrix Solid	Method 8015NM Prep	Prep Batch
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### Analysis Batch: 31756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2716-1	SW39	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 31559

Lab Sample ID 890-2716-1	Client Sample ID SW39	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-31559/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

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#### **QC Association Summary**

Client: Ensolum Job ID: 890-2716-1
Project/Site: Goldenchild CTB SDG: 03E1558018

**HPLC/IC** (Continued)

#### Leach Batch: 31559 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Analysis Batch: 31937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2716-1	SW39	Soluble	Solid	300.0	31559
MB 880-31559/1-A	Method Blank	Soluble	Solid	300.0	31559
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	300.0	31559
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31559
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	31559
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31559

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#### **Lab Chronicle**

Client: Ensolum Job ID: 890-2716-1 Project/Site: Goldenchild CTB SDG: 03E1558018

**Client Sample ID: SW39** 

Lab Sample ID: 890-2716-1 Date Collected: 08/02/22 14:55

Matrix: Solid

Date Received: 08/03/22 08:41

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	31767	08/08/22 13:00	MR	EET MID
Total/NA	Analysis	8021B		1			31850	08/10/22 17:20	MR	EET MID
Total/NA	Analysis	Total BTEX		1			31998	08/11/22 11:16	SM	EET MID
Total/NA	Analysis	8015 NM		1			31756	08/08/22 11:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31555	08/05/22 09:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31531	08/06/22 01:08	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	31559	08/05/22 10:29	СН	EET MID
Soluble	Analysis	300.0		1			31937	08/12/22 08:14	AJ	EET MID

#### **Laboratory References:**

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

#### **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2716-1 Project/Site: Goldenchild CTB SDG: 03E1558018

**Laboratory: Eurofins Midland** 

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

Authority	Pr	ogram	Identification Number	Expiration Date
Texas	NI	ELAP	T104704400-22-24	06-30-23
The following analytes the agency does not o		ut the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for which
Analysis Method	Prep Method	Matrix	Analyte	
8015 NM		Solid	Total TPH	
00.0				

#### **Method Summary**

Job ID: 890-2716-1 Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558018

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

Job ID: 890-2716-1

Project/Site: Goldenchild CTB SDG: 03E1558018

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2716-1	SW39	Solid	08/02/22 14:55	08/03/22 08:41	0-9'

eurofins

Xenco

**Environment Testing** 

Project Manager: Company Name:

Kalie

Ensolum, LCC

Bill to: (if different) Company Name:

Carett XTO

Energy Green

Program: State of Project:

UST/PST PRP Brownfields

RRC

Superfund [

www.xenco.com

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of.

**Work Order Comments** 

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## Chain of Custody

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 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

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gnature) Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time		(Signature)	Received by (Signature	gnature) \	Relinquished by: (Signature)
	nditions control isly negotiated.	ce: 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 rocke. 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 area of the control of the control support of the control support of the control of the co	ofins Xenco, its affiliates and inses incurred by the client if Eurofins Xenco, but not analy	ent company to Eur r any losses or expe ample submitted to	lid purchase order from cli sume any responsibility for the charge of \$5 for each s	ples constitutes a va ples and shall not as to each project and	nt and relinquishment of sam liable only for the cost of san harge of \$85.00 will be applied	e: Signature of this docum rvke. Eurofins Xenco will b rofins Xenco. A minimum o
Hg: 1631 / 245.1 / /4/0 / /4/1		TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag	Sb As Ba Be Cd C	IO : 8RCRA	TCLP / SPLP 60	alyzed	rcie Method(s) and Metal(s) to be analyzed	cle Method(s) an
Na Sr Ti Sn U V Zn	i K Se		Al Sb As Ba Be B Cd	Texas 11 Al S	8RCRA 13PPM Te	- 1	200.8 / 6020:	Total 200.7 / 6010
NATP2101331137								
NA PP2101335437								
NAPP 2102237559								
NAPP203525630								
Incident Number:								
1001545501								F/Z
Cost Center:			X X X	COMP	1455 0-9'	8.2-22	1,05	SW39
Sample Comments			B	Grab/ # of Cont	Time Depth	Date Sampled	ation Matrix	Sample Identification
NaOH+Ascorbic Acid: SAPC		890-2716 Chain of Custody	TE PI hk	N.	nperature:	Corrected Temperature:		tal Containers:
Zn Acetate+NaOH: Zn			4	0	Reading:	Temperature Reading:	Yes No WA	mple Custody Seals:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>			de			Correction Factor:	¥8	oler Custody Seals:
NaHSO 4: NABIS				Tan DOT Tan		Thermometer ID:		nples Received Intact:
H,PO4:HP			80.	eters	Wet Ice: (Yes	(Kes No	Temp Blank:	MPLE RECEIPT
H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na	-				the lab, if received by 4:30pm			#:
HCL: HC HNO 3: HN				ived by	TAT starts the day received by	.ح	Josh Adams	npler's Name:
Cool: Cool MeOH: Me			) )		Due Date:			ject Location:
None: NO DI Water: H <sub>2</sub> O				sh Code	Routine Rush		03E1558018	oject Number:
Preservative Codes		ANALYSIS REQUEST			Turn Around	CTB	Golden Child CTB	ject Name:
ADaPT Other:	Deliverables: EDD		0	jennings	Email: K	2503	817-683-2503	one:
Reporting: Level III Level III PST/UST TRRP Level IV	orting: Level II   Level III	288	Carlsba	City, State ZIP:	City, St	M 88220	Carlsbad, NM	y, State ZIP:
]	State of Project:	E. Gran St	3104	S:	S Hury Addres	nal Park	3122 Abdional Parks Huy Address:	dress:

Work Order No:

#### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2716-1 SDG Number: 03E1558018

Login Number: 2716 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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

#### **Login Sample Receipt Checklist**

Client: Ensolum Job I

Job Number: 890-2716-1 SDG Number: 03E1558018

Login Number: 2716
List Source: Eurofins Midland
List Number: 2
List Creation: 08/04/22 10:22 AM

Creator: Rodriguez, Leticia

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

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<6mm (1/4").

Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 4/20/2023 7:34:48 AM

**Environment Testing America** 

## **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2725-1

Laboratory Sample Delivery Group: 03E1558015

Client Project/Site: Goldenchild CTB

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

RAMER

Authorized for release by: 8/12/2022 7:18:30 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum

Laboratory Job ID: 890-2725-1

Project/Site: Goldenchild CTB

SDG: 03E1558015

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#### **Definitions/Glossary**

Client: Ensolum Job ID: 890-2725-1
Project/Site: Goldenchild CTB SDG: 03E1558015

E1558015

**Qualifiers** 

**GC VOA** 

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

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.

Eisted 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

**Eurofins Carlsbad** 

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#### **Case Narrative**

Client: Ensolum Job ID: 890-2725-1 Project/Site: Goldenchild CTB

SDG: 03E1558015

Job ID: 890-2725-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2725-1

#### Receipt

The sample was received on 8/4/2022 8:21 AM. 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  $3.2^{\circ}\text{C}$ 

#### GC VOA

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

#### GC Semi VOA

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

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

Matrix: Solid

Lab Sample ID: 890-2725-1

#### **Client Sample Results**

Client: Ensolum Job ID: 890-2725-1
Project/Site: Goldenchild CTB SDG: 03E1558015

Client Sample ID: SW42

Date Collected: 08/03/22 15:45 Date Received: 08/04/22 08:21

Sample Depth: 0 - 9

	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/09/22 14:20	08/10/22 23:51	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/09/22 14:20	08/10/22 23:51	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		08/09/22 14:20	08/10/22 23:51	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/09/22 14:20	08/10/22 23:51	1
o-Xylene	< 0.00199	U	0.00199	mg/Kg		08/09/22 14:20	08/10/22 23:51	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/09/22 14:20	08/10/22 23:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130			08/09/22 14:20	08/10/22 23:51	1
1,4-Difluorobenzene (Surr)	88		70 - 130			08/09/22 14:20	08/10/22 23:51	1
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			08/11/22 10:57	1
Analyte	Result	Qualifier			_			
	rtoouit	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8		49.8	mg/Kg	D	Prepared	Analyzed 08/08/22 12:38	Dil Fac
Total TPH	<49.8	U			<u>D</u>	Prepared		
Total TPH  Method: 8015B NM - Diesel Ran	<49.8 ge Organics (D	U (GC)	49.8	mg/Kg		<u> </u>	08/08/22 12:38	1
Total TPH  Method: 8015B NM - Diesel Rang Analyte	<49.8  ge Organics (D	RO) (GC) Qualifier	49.8	mg/Kg	<u>D</u>	Prepared	08/08/22 12:38  Analyzed	1 Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	<49.8 ge Organics (D	RO) (GC) Qualifier	49.8	mg/Kg		<u> </u>	08/08/22 12:38	1
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10	<49.8  ge Organics (D	O (GC) Qualifier U	49.8	mg/Kg		Prepared	08/08/22 12:38  Analyzed	1 Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	<49.8  ge Organics (Di Result <49.8	O (GC) Qualifier U	49.8  RL 49.8	mg/Kg  Unit  mg/Kg		Prepared 08/05/22 11:58	08/08/22 12:38  Analyzed  08/06/22 23:09	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	<49.8  ge Organics (Di Result <49.8	RO) (GC) Qualifier U	49.8  RL 49.8	mg/Kg  Unit  mg/Kg		Prepared 08/05/22 11:58	08/08/22 12:38  Analyzed  08/06/22 23:09	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<49.8  ge Organics (Di Result <49.8 <49.8	Qualifier U	49.8  RL 49.8  49.8	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/05/22 11:58 08/05/22 11:58	08/08/22 12:38  Analyzed  08/06/22 23:09  08/06/22 23:09	1 Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<49.8  ge Organics (Di Result <49.8 <49.8 <49.8	Qualifier U	49.8 RL 49.8 49.8 49.8	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/05/22 11:58 08/05/22 11:58	08/08/22 12:38  Analyzed 08/06/22 23:09 08/06/22 23:09	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	<49.8 ge Organics (D) Result <49.8 <49.8 <49.8 %Recovery	Qualifier U	49.8 49.8 49.8 49.8 Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/05/22 11:58 08/05/22 11:58 08/05/22 11:58 Prepared	08/08/22 12:38  Analyzed 08/06/22 23:09 08/06/22 23:09 08/06/22 23:09  Analyzed	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<49.8 ge Organics (D) Result <49.8 <49.8 <49.8 <89 105	CO (GC) Qualifier U U Qualifier	49.8  49.8  49.8  49.8  49.8  Limits  70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/05/22 11:58 08/05/22 11:58 08/05/22 11:58 Prepared 08/05/22 11:58	08/08/22 12:38  Analyzed 08/06/22 23:09 08/06/22 23:09  Analyzed 08/06/22 23:09	1 Dil Fac 1 1
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	49.8 ge Organics (D) Result <49.8 <49.8 <49.8 <89 105 omatography -	CO (GC) Qualifier U U Qualifier	49.8  49.8  49.8  49.8  49.8  Limits  70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 08/05/22 11:58 08/05/22 11:58 08/05/22 11:58 Prepared 08/05/22 11:58	08/08/22 12:38  Analyzed 08/06/22 23:09 08/06/22 23:09  Analyzed 08/06/22 23:09	Dil Fac  1  1  1  Dil Fac  1

**Eurofins Carlsbad** 

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#### **Surrogate Summary**

Client: Ensolum Job ID: 890-2725-1
Project/Site: Goldenchild CTB SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Rec
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2717-A-1-H MS	Matrix Spike	104	93	
890-2717-A-1-I MSD	Matrix Spike Duplicate	103	94	
890-2725-1	SW42	117	88	
LCS 880-31852/1-A	Lab Control Sample	104	93	
LCSD 880-31852/2-A	Lab Control Sample Dup	117	93	
MB 880-31852/5-A	Method Blank	100	87	
MB 880-31859/5-A	Method Blank	99	88	

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

OTPH = o-Terphenyl

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance L
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
90-2723-A-1-C MS	Matrix Spike	89	90	
90-2723-A-1-D MSD	Matrix Spike Duplicate	89	91	
390-2725-1	SW42	89	105	
CS 880-31577/2-A	Lab Control Sample	93	96	
CSD 880-31577/3-A	Lab Control Sample Dup	91	95	
/IB 880-31577/1-A	Method Blank	89	107	
Surrogate Legend				
1CO = 1-Chlorooctane				

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Client: Ensolum Job ID: 890-2725-1 SDG: 03E1558015 Project/Site: Goldenchild CTB

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31852/5-A

**Matrix: Solid** Analysis Batch: 31883 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31852

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 14:20	08/10/22 23:09	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 14:20	08/10/22 23:09	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 14:20	08/10/22 23:09	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/09/22 14:20	08/10/22 23:09	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 14:20	08/10/22 23:09	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/09/22 14:20	08/10/22 23:09	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	_	08/09/22 14:20	08/10/22 23:09	1
1,4-Difluorobenzene (Surr)	87		70 - 130		08/09/22 14:20	08/10/22 23:09	1

Lab Sample ID: LCS 880-31852/1-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

**Analysis Batch: 31883** 

Prep Type: Total/NA Prep Batch: 31852

Spike LCS LCS Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.07639 mg/Kg 76 70 - 130 Toluene 0.100 0.07711 mg/Kg 77 70 - 130 0.100 0.08089 70 - 130 Ethylbenzene mg/Kg 81 0.200 0.1645 82 70 - 130 m-Xylene & p-Xylene mg/Kg 0.100 0.09143 70 - 130 o-Xylene mg/Kg

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: LCSD 880-31852/2-A

**Matrix: Solid** 

Analysis Batch: 31883

Client	Sample	ו:טו	Lab	Control	Sample I	Jup

Prep Type: Total/NA

Prep Batch: 31852

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.07451		mg/Kg		75	70 - 130	2	35	
Toluene	0.100	0.07796		mg/Kg		78	70 - 130	1	35	
Ethylbenzene	0.100	0.08436		mg/Kg		84	70 - 130	4	35	
m-Xylene & p-Xylene	0.200	0.1738		mg/Kg		87	70 - 130	6	35	
o-Xylene	0.100	0.09756		mg/Kg		98	70 - 130	6	35	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1.4-Difluorobenzene (Surr)	93		70 <sub>-</sub> 130

Lab Sample ID: 890-2717-A-1-H MS

**Matrix: Solid** 

**Analysis Batch: 31883** 

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

Prep Batch: 31852

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U	0.100	0.09566		mg/Kg	_	95	70 - 130	 
Toluene	<0.00201	U	0.100	0.09695		mg/Kg		96	70 - 130	

Job ID: 890-2725-1 Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558015

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

Lab Sample ID: 890-2717-A-1-H MS

**Matrix: Solid** 

**Analysis Batch: 31883** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31852

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.00201 U 0.100 0.1007 100 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00402 U 0.201 0.2015 mg/Kg 100 70 - 130 0.100 o-Xylene <0.00201 U 0.1109 110 70 - 130 mg/Kg

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Client Sample ID: Matrix Spike Duplicate

70 - 130

105

Prep Type: Total/NA

Prep Batch: 31852

**Matrix: Solid Analysis Batch: 31883** 

Lab Sample ID: 890-2717-A-1-I MSD

Sample Sample Spike MSD MSD RPD Result Qualifier %Rec RPD Limit Analyte Added Result Qualifier Unit Limits Benzene <0.00201 U 0.0998 0.09159 mg/Kg 92 70 - 130 4 35 Toluene <0.00201 U 0.0998 0.09133 mg/Kg 91 70 - 130 6 35 Ethylbenzene <0.00201 U 0.0998 0.09450 95 70 - 130 6 35 mg/Kg 0.200 0.1903 95 35 m-Xylene & p-Xylene <0.00402 U mg/Kg 70 - 130 6

0.1047

mg/Kg

0.0998

MSD MSD

<0.00201 U

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: MB 880-31859/5-A

**Matrix: Solid** 

o-Xylene

**Analysis Batch: 31883** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31859

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:44	08/10/22 12:32	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:44	08/10/22 12:32	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:44	08/10/22 12:32	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/09/22 15:44	08/10/22 12:32	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 15:44	08/10/22 12:32	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/09/22 15:44	08/10/22 12:32	1

MB MB

мв мв

<50.0 U

Result Qualifier

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	08/09/22 15:44	08/10/22 12:32	1
1,4-Difluorobenzene (Surr)	88		70 - 130	08/09/22 15:44	08/10/22 12:32	1

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

Lab Sample ID: MB 880-31577/1-A

Released to Imaging: 4/20/2023 7:34:48 AM

**Matrix: Solid** 

**Analysis Batch: 31631** 

Gasoline Range Organics

Client Sample ID: Method Blank

Prepared

08/05/22 11:58

Prep Type: Total/NA Prep Batch: 31577

08/06/22 20:38

(GRO)-C6-C10

Analyte

**Eurofins Carlsbad** 

RL

50.0

Unit

mg/Kg

Client: Ensolum Job ID: 890-2725-1
Project/Site: Goldenchild CTB SDG: 03E1558015

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

Lab Sample ID: MB 880-31577/1-A

Matrix: Solid

Analysis Batch: 31631

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31577

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		08/05/22 11:58	08/06/22 20:38	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 11:58	08/06/22 20:38	1
	MR	MR						

	МВ	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130	08/05/22 11:58	08/06/22 20:38	1
o-Terphenyl	107		70 - 130	08/05/22 11:58	08/06/22 20:38	1

Lab Sample ID: LCS 880-31577/2-A

Matrix: Solid

Analysis Batch: 31631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31577

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	922.7		mg/Kg	_	92	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	901.7		mg/Kg		90	70 - 130	
C10-C28)								

	LUS LUS	
Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	93	70 - 130
o-Terphenyl	96	70 - 130

Lab Sample ID: LCSD 880-31577/3-A

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 31631

Analysis Batch: 31631 Prep Batch: 31577

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	905.4		mg/Kg		91	70 - 130	2	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	879.0		mg/Kg		88	70 - 130	3	20	
C10-C28)										

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	95		70 - 130

Lab Sample ID: 890-2723-A-1-C MS

Client Sample ID: Matrix Spike

Matrix: Solid Prep Type: Total/NA Analysis Batch: 31631 Prep Batch: 31577

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<49.9	U	999	1016		mg/Kg		100	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<49.9	U	999	962.5		mg/Kg		94	70 - 130	
C40 C30)										

C10-C28)			
	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	90		70 - 130

**Eurofins Carlsbad** 

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4.0

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Client: Ensolum Job ID: 890-2725-1 Project/Site: Goldenchild CTB SDG: 03E1558015

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

Client Sample ID: Matrix Spike Duplicate

Lab Sample ID: 890-2723-A-1-D MSD **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 31631 Prep Batch: 31577

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	<49.9	U	999	1031		mg/Kg		101	70 - 130	1	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<49.9	U	999	981.9		mg/Kg		96	70 - 130	2	20
C10-C28)											

	IVISD	WSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	91		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31560/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31932** 

	IVID	INID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			08/11/22 13:38	1

Lab Sample ID: LCS 880-31560/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble Matrix: Solid** 

**Analysis Batch: 31932** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	248.4	-	mg/Kg		99	90 - 110	 

Lab Sample ID: LCSD 880-31560/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31932** 

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	248.0		mg/Kg		99	90 - 110	0	20	

Lab Sample ID: 890-2722-A-12-B MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 31932

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	200		250	458.6		ma/Ka		104	90 - 110	

Lab Sample ID: 890-2722-A-12-C MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** Analysis Batch: 31932

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Result Qualifier Limit Analyte %Rec Limits RPD Unit 250 475.0 Chloride 200 110 90 - 110 mg/Kg

**Eurofins Carlsbad** 

**Prep Type: Soluble** 

#### **QC Association Summary**

Client: Ensolum Job ID: 890-2725-1
Project/Site: Goldenchild CTB SDG: 03E1558015

**GC VOA** 

Prep Batch: 31852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2725-1	SW42	Total/NA	Solid	5035	
MB 880-31852/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31852/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31852/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2717-A-1-H MS	Matrix Spike	Total/NA	Solid	5035	
890-2717-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 31859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31859/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 31883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2725-1	SW42	Total/NA	Solid	8021B	31852
MB 880-31852/5-A	Method Blank	Total/NA	Solid	8021B	31852
MB 880-31859/5-A	Method Blank	Total/NA	Solid	8021B	31859
LCS 880-31852/1-A	Lab Control Sample	Total/NA	Solid	8021B	31852
LCSD 880-31852/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31852
890-2717-A-1-H MS	Matrix Spike	Total/NA	Solid	8021B	31852
890-2717-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31852

Analysis Batch: 31992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2725-1	SW42	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

Prep Batch: 31577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2725-1	SW42	Total/NA	Solid	8015NM Prep	
MB 880-31577/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31577/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31577/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2723-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2723-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2725-1	SW42	Total/NA	Solid	8015B NM	31577
MB 880-31577/1-A	Method Blank	Total/NA	Solid	8015B NM	31577
LCS 880-31577/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31577
LCSD 880-31577/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31577
890-2723-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	31577
890-2723-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31577

**Analysis Batch: 31762** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2725-1	SW42	Total/NA	Solid	8015 NM	

#### **QC Association Summary**

Client: Ensolum Job ID: 890-2725-1
Project/Site: Goldenchild CTB SDG: 03E1558015

HPLC/IC

Leach Batch: 31560

<b>Lab Sample ID</b> 890-2725-1	Client Sample ID SW42	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-31560/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31560/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31560/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2722-A-12-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2722-A-12-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2725-1	SW42	Soluble	Solid	300.0	31560
MB 880-31560/1-A	Method Blank	Soluble	Solid	300.0	31560
LCS 880-31560/2-A	Lab Control Sample	Soluble	Solid	300.0	31560
LCSD 880-31560/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31560
890-2722-A-12-B MS	Matrix Spike	Soluble	Solid	300.0	31560
890-2722-A-12-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31560

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Date Received: 08/04/22 08:21

#### **Lab Chronicle**

Client: Ensolum Job ID: 890-2725-1 Project/Site: Goldenchild CTB SDG: 03E1558015

Client Sample ID: SW42 Lab Sample ID: 890-2725-1 Date Collected: 08/03/22 15:45

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	31852	08/09/22 14:20	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31883	08/10/22 23:51	SM	EET MID
Total/NA	Analysis	Total BTEX		1			31992	08/11/22 10:57	SM	EET MID
Total/NA	Analysis	8015 NM		1			31762	08/08/22 12:38	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	31577	08/05/22 11:58	DM	EET MID
Total/NA	Analysis	8015B NM		1			31631	08/06/22 23:09	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	31560	08/05/22 10:32	СН	EET MID
Soluble	Analysis	300.0		1			31932	08/11/22 18:15	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 Job ID: 890-2725-1
Project/Site: Goldenchild CTB SDG: 03E1558015

**Laboratory: Eurofins Midland** 

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

Authority		ogram	Identification Number	<b>Expiration Date</b>
Texas	NE	ELAP	T104704400-22-24	06-30-23
The following englytes	and the street and the state of a contract that			
the agency does not of	• '	it the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for
,	• '	t the laboratory is not certifi  Matrix	ed by the governing authority. This list ma	ay include analytes for
the agency does not of	fer certification.	•	, , ,	ay include analytes for

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#### **Method Summary**

Job ID: 890-2725-1 Client: Ensolum SDG: 03E1558015 Project/Site: Goldenchild CTB

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: Goldenchild CTB

Job ID: 890-2725-1

SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2725-1	SW42	Solid	08/03/22 15:45	08/04/22 08:21	0 - 9

Revised Date 08/25/2020 Rev 2020

# Chain of Custody

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 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Work Order No:

									www.xenco.com	COM rage	5
Project Manager:   Kal	Kalei Jennings		III	Bill to: (if different)		Garrett Green	en		Work Ord	Work Order Comments	
	Ensolum		8	Company Name:		XTO Energy	^		Program: UST/PST 🗌 PRP 🗌 B	☐ PRP ☐ Brownfleids ☐ RRC [	☐ Superfund ☐
	3122 National Parks Hwy	łwy	Ad	Address:		3104 East Green St.	Green St.		State of Project:		
le ZIP:	Carlsbad, NM 88220		Ö	City, State ZIP:	O	Carlsbad, NM 88220	JM 88220		Reporting: Level II 🗌 Level III 📋 PST/UST 📋 TRRP 📋	PST/UST   TRRP	☐ Level IV ☐
	303-887-2946		Email: kjenr	ennings@ensolum.com	solum.c	mo			Deliverables: EDD 🔲 A	ADaPT ☐ Other:	
Project Name:	Goldenchild CTB	TB	Turn Arou	puno				ANALYSIS REQUEST	EST	Preserva	Preservative Codes
Project Number:	03E1558015	5	✓ Routine	□ Rush	Pres. Code					None: NO	DI Water: H <sub>2</sub> O
Project Location:			Due Date:							Cool: Cool	МеОН: Ме
Sampler's Name:	Conner Shore	ē	TAT starts the day received by	ay received by		_				HCL: HC	HNO3: HN
PO#:			the lab, if received by 4:30pm	ed by 4:30pm	SI					H <sub>2</sub> S04: H <sub>2</sub>	NaOH: Na
SAMPLE RECEIPT	Temp Blank:	oN (sa)	Wet Ice:	(Yes) No	əşəu	(0.				H3PO4: HP	
Samples Received Intact	t: (Yes) No	Thermometer ID:		NM.007	nen	300				NaHSO4: NABIS	<b></b>
Cooler Custody Seals:	Yes No MA	Correction Factor:	actor:	-8.2	sq.	:A9				Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	n
Sample Custody Seals:	Yes No N/A	Temperature Reading:		3.4	-	I3) S		890-2725 Chain of Custody	stody	Zn Acetate+NaOH: Zn	OH: Zn
Total Containers:		Corrected Temperature:		3.2			1208	· mildrenner		NaOH+Ascorbic Acid: SAPC	: Acid: SAPC
Sample Identification	cation Matrix	Date Sampled	Time D	Depth Grab/	# of Cont	сн <b>гоя</b> тън (80	в) хэта			Sample (	Sample Comments
SW42	S	08.03.22	1545 0-9'	ن 6-	-	×	×			NAPP20	NAPP2035526230,
				١						NAPP21	NAPP2102237559, NAPP2101355437 &
										NAPP21	NAPP2101331137
										Cost Center: 105575001	05575001
		/									
	(	1								AFE:	
	X										
	V										
1											
Total 200.7 / 6010	200.8 / 6020:	8	BRCRA 13PPM	M Texas 11	Al Sb	As Ba	Be B Cd	Ca Cr Co Cu Fe Pb N	Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub>	2 Na Sr Ti Sn U	V Zn
Circle Method(s) and Metal(s) to be analyzed	Metal(s) to be analy	/zed	TCLP / SPLP	P 6010: 8R	BRCRA S	Sb As Ba	Be Cd C	Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti	Se Ag Ti U Hg: 16	Hg: 1631 / 245.1 / 7470 / 747	7471
Notice: Signature of this docu	ment and relinquishment	t of samples con	stitutes a valid pure	chase order from	client co	npany to Eu	rofins Xenco, it	affillates and subcontractors. It d by the client if such losses are	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 for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control	ıs	
of Eurofins Xenco. A minimur	m charge of \$85.00 will be	applied to each	project and a chan	ge of \$5 for each	samples	ubmitted to	Eurofins Xenco	but not analyzed. These terms w	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.	llated.	
Relinquished by: (Signature)	Signature)	Receive	Received by: (Signature)	(e)	J	Date/Time		Relinquished by: (Signature)	e) Received by: (Signature)	nature)	Date/Time
90.		0 00/	200		7.00	8-4-22 8AI	2 120 x				

#### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2725-1 SDG Number: 03E1558015

List Source: Eurofins Carlsbad

Login Number: 2725 List Number: 1 Creator: Clifton, Cloe

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

#### **Login Sample Receipt Checklist**

Client: Ensolum Job Nur

Job Number: 890-2725-1 SDG Number: 03E1558015

List Source: Eurofins Midland
List Number: 2
List Creation: 08/05/22 10:35 AM

Creator: Rodriguez, Leticia

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

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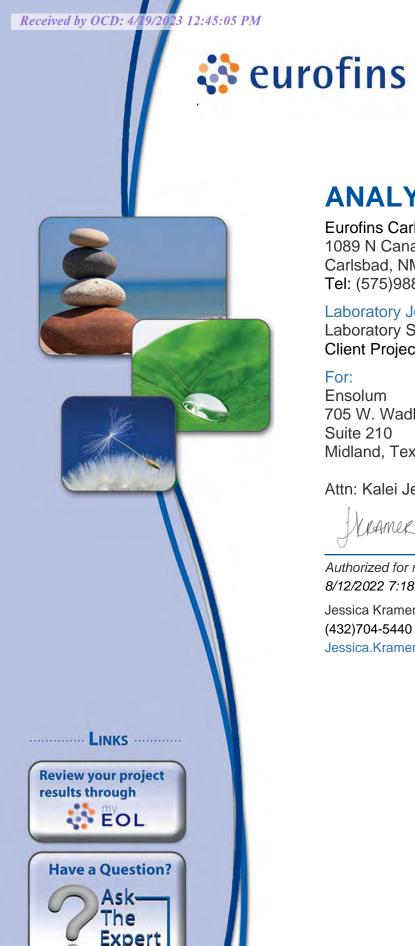
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<6mm (1/4").



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## **Environment Testing America**

## **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2726-1

Laboratory Sample Delivery Group: 03E1558015

Client Project/Site: Goldenchild CTB

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

RAMER

Authorized for release by: 8/12/2022 7:18:48 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum
Project/Site: Goldenchild CTB
Laboratory Job ID: 890-2726-1
SDG: 03E1558015

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#### **Definitions/Glossary**

Client: Ensolum Job ID: 890-2726-1 Project/Site: Goldenchild CTB

SDG: 03E1558015

#### **Qualifiers**

GC	VOA

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

#### **GC Semi VOA**

Qualifier C	Qualifier	Descriptio
-------------	-----------	------------

Indicates the analyte was analyzed for but not detected.

#### **HPLC/IC**

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

Minimum Level (Dioxin) ML MPN Most Probable Number Method Quantitation Limit MQL 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

**Quality Control** QC

**RER** Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

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: Goldenchild CTB

Job ID: 890-2726-1

SDG: 03E1558015

Job ID: 890-2726-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2726-1

#### Receipt

The samples were received on 8/4/2022 8:21 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

#### **GC VOA**

Method 8021B: Surrogate recovery for the following samples were outside control limits: (LCS 880-31767/1-A) and (LCSD 880-31767/2-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-2704-A-1-I MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: FS14 (890-2726-2) and SW41 (890-2726-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-31767 and analytical batch 880-31850 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### GC Semi VOA

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

#### HPLC/IC

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

**Eurofins Carlsbad** 8/12/2022 Job ID: 890-2726-1

Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558015

**Client Sample ID: SW40** Lab Sample ID: 890-2726-1 Date Collected: 08/03/22 10:55 Matrix: Solid

Date Received: 08/04/22 08:21

Sample Depth: 0 - 9

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 17:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 17:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 17:46	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		08/08/22 13:00	08/10/22 17:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 17:46	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/08/22 13:00	08/10/22 17:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130			08/08/22 13:00	08/10/22 17:46	1
1,4-Difluorobenzene (Surr)	77		70 - 130			08/08/22 13:00	08/10/22 17:46	1
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00399	U	0.00399	mg/Kg			08/11/22 11:16	1
Method: 8015 NM - Diesel Range	3							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<u> </u>			<b>RL</b> 50.0	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 08/08/22 12:38	Dil Fac
Total TPH	<50.0	U			<u>D</u>	Prepared		
Total TPH Method: 8015B NM - Diesel Ran	<50.0	U (GC)	50.0	mg/Kg	=		08/08/22 12:38	1
Total TPH  Method: 8015B NM - Diesel Rang  Analyte	<50.0	RO) (GC) Qualifier			<u>D</u>	Prepared  Prepared  08/05/22 11:58		
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10	<50.0  ge Organics (Di Result <50.0	RO) (GC) Qualifier	50.0 RL 50.0	mg/Kg  Unit  mg/Kg	=	Prepared 08/05/22 11:58	08/08/22 12:38  Analyzed  08/06/22 23:31	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	<50.0  ge Organics (D	RO) (GC) Qualifier	50.0	mg/Kg	=	Prepared	08/08/22 12:38  Analyzed	1 Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)	<50.0  ge Organics (Di Result <50.0	RO) (GC) Qualifier U	50.0 RL 50.0	mg/Kg  Unit  mg/Kg	=	Prepared 08/05/22 11:58	08/08/22 12:38  Analyzed  08/06/22 23:31	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<50.0  ge Organics (Di Result <50.0 <50.0	U RO) (GC) Qualifier U U	50.0  RL  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg	=	Prepared 08/05/22 11:58 08/05/22 11:58	08/08/22 12:38  Analyzed  08/06/22 23:31  08/06/22 23:31	1 Dil Fac 1 1
Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<50.0  ge Organics (Di Result <50.0 <50.0 <50.0	U RO) (GC) Qualifier U U	50.0  RL 50.0  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg	=	Prepared 08/05/22 11:58 08/05/22 11:58	08/08/22 12:38  Analyzed 08/06/22 23:31 08/06/22 23:31	1 Dil Fac 1 1
Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<50.0  ge Organics (Digentification (Dig	U RO) (GC) Qualifier U U	50.0  RL 50.0  50.0  50.0  Limits	mg/Kg  Unit  mg/Kg  mg/Kg	=	Prepared 08/05/22 11:58 08/05/22 11:58 08/05/22 11:58 Prepared	08/08/22 12:38  Analyzed  08/06/22 23:31  08/06/22 23:31  08/06/22 23:31  Analyzed	Dil Fac  1  1  Dil Fac
Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<50.0 ge Organics (D) Result <50.0 <50.0 <50.0 <50.0 %Recovery 98 121	CODE CODE CODE CODE CODE CODE CODE CODE	50.0  RL 50.0  50.0  50.0  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg	=	Prepared 08/05/22 11:58 08/05/22 11:58 08/05/22 11:58  Prepared 08/05/22 11:58	08/08/22 12:38  Analyzed 08/06/22 23:31  08/06/22 23:31  Analyzed 08/06/22 23:31	1 Dil Fac 1 Dil Fac 1
Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	<50.0 ge Organics (D) Result <50.0 <50.0 <50.0 <8ecovery 98 121 omatography -	CODE CODE CODE CODE CODE CODE CODE CODE	50.0  RL 50.0  50.0  50.0  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg	=	Prepared 08/05/22 11:58 08/05/22 11:58 08/05/22 11:58  Prepared 08/05/22 11:58	08/08/22 12:38  Analyzed 08/06/22 23:31  08/06/22 23:31  Analyzed 08/06/22 23:31	1 Dil Fac 1 Dil Fac 1

**Client Sample ID: FS14** Lab Sample ID: 890-2726-2

Date Collected: 08/03/22 15:50 Date Received: 08/04/22 08:21

Sample Depth: 9

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/08/22 13:00	08/10/22 18:13	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/08/22 13:00	08/10/22 18:13	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/08/22 13:00	08/10/22 18:13	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		08/08/22 13:00	08/10/22 18:13	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		08/08/22 13:00	08/10/22 18:13	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		08/08/22 13:00	08/10/22 18:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	133	S1+	70 - 130			08/08/22 13:00	08/10/22 18:13	

**Eurofins Carlsbad** 

**Matrix: Solid** 

Matrix: Solid

Lab Sample ID: 890-2726-2

Client: Ensolum Job ID: 890-2726-1
Project/Site: Goldenchild CTB SDG: 03E1558015

Client Sample ID: FS14

Date Collected: 08/03/22 15:50 Date Received: 08/04/22 08:21

Sample Depth: 9

Method: 8021B - Volatile Organic Compo	ounds (GC)	(Continued)
motification to a gaine compa	Julius (33)	( Continuou,

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	81	70 - 130	08/08/22 13:00	08/10/22 18:13	1

ı				
ı	Method:	Total RTFX	: - Total BTEX	Calculation
ı	mictilou.	TOTAL DIE	- IOLAI DIEA	Oulculation

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402 U	0.00402	ma/Ka			08/11/22 11:16	1

Method: 801	5 NM - Diesel	Range Organics	e (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/08/22 12:38	1

Method: 8015B NM - Diese	I Range Organics (D	RO) (GC)
--------------------------	---------------------	----------

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/05/22 11:58	08/06/22 23:52	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/05/22 11:58	08/06/22 23:52	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 11:58	08/06/22 23:52	1
0	0/ 5	O!!!!	1 : : 4			D	A I	D:/ F

Surrogate	%Recovery Qual	lifier Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	101	70 - 130	08/05/22 11:58	08/06/22 23:52	1
o-Terphenyl	121	70 - 130	08/05/22 11:58	08/06/22 23:52	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.08		4.97	mg/Kg			08/11/22 18:33	1

Client Sample ID: SW41 Lab Sample ID: 890-2726-3

Date Collected: 08/03/22 15:40 Date Received: 08/04/22 08:21

Sample Depth: 0 - 9

Method: 8021B -	. Volatila	Organic (	Compounds	(GC)
Methou, ouz ib :	· voiatile	Oruanic C	JUHUUUHIUS	100

		/						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/08/22 13:00	08/10/22 18:39	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/08/22 13:00	08/10/22 18:39	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		08/08/22 13:00	08/10/22 18:39	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/08/22 13:00	08/10/22 18:39	1
o-Xylene	< 0.00199	U	0.00199	mg/Kg		08/08/22 13:00	08/10/22 18:39	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/08/22 13:00	08/10/22 18:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	148	S1+	70 - 130			08/08/22 13:00	08/10/22 18:39	1
1,4-Difluorobenzene (Surr)	82		70 - 130			08/08/22 13:00	08/10/22 18:39	1

Mothod:	Total RT	EY - Tota	I DTEY	Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00398	U	0.00398	ma/Ka			08/11/22 11:16	1

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

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	mg/Kg			08/08/22 12:38	1

Eurofins Carlsbad

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Matrix: Solid

Matrix: Solid

Lab Sample ID: 890-2726-3

# **Client Sample Results**

Client: Ensolum Job ID: 890-2726-1
Project/Site: Goldenchild CTB SDG: 03E1558015

Client Sample ID: SW41

Date Collected: 08/03/22 15:40 Date Received: 08/04/22 08:21

Sample Depth: 0 - 9

Method: 8015B NM - Diesel Rang	je Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/05/22 11:58	08/07/22 00:13	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/05/22 11:58	08/07/22 00:13	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 11:58	08/07/22 00:13	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			08/05/22 11:58	08/07/22 00:13	
o-Terphenyl	114		70 - 130			08/05/22 11:58	08/07/22 00:13	1
Method: 300.0 - Anions, Ion Chro	matography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.4		5.00	mg/Kg			08/11/22 18:43	1

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# **Surrogate Summary**

Client: Ensolum Job ID: 890-2726-1 Project/Site: Goldenchild CTB SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Rec
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2704-A-1-H MS	Matrix Spike	130	85	
890-2704-A-1-I MSD	Matrix Spike Duplicate	140 S1+	84	
890-2726-1	SW40	129	77	
890-2726-2	FS14	133 S1+	81	
890-2726-3	SW41	148 S1+	82	
LCS 880-31767/1-A	Lab Control Sample	136 S1+	81	
LCSD 880-31767/2-A	Lab Control Sample Dup	131 S1+	84	
MB 880-31767/5-A	Method Blank	103	75	
MB 880-31850/8	Method Blank	99	77	
Surrogate Legend				
BFB = 4-Bromofluorober	nzene (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	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2723-A-1-C MS	Matrix Spike	89	90	
890-2723-A-1-D MSD	Matrix Spike Duplicate	89	91	
890-2726-1	SW40	98	121	
890-2726-2	FS14	101	121	
890-2726-3	SW41	96	114	
LCS 880-31577/2-A	Lab Control Sample	93	96	
LCSD 880-31577/3-A	Lab Control Sample Dup	91	95	
MB 880-31577/1-A	Method Blank	89	107	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

**Eurofins Carlsbad** 

Client: Ensolum Job ID: 890-2726-1 SDG: 03E1558015 Project/Site: Goldenchild CTB

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31767/5-A

**Matrix: Solid** 

Analysis Batch: 31850

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31767

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 06:38	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 06:38	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 06:38	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/08/22 13:00	08/10/22 06:38	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/22 13:00	08/10/22 06:38	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/08/22 13:00	08/10/22 06:38	1

MB MB

MD MD

Surrogate	%Recovery	Qualifier	Limits	F	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	08/0	08/22 13:00	08/10/22 06:38	1
1,4-Difluorobenzene (Surr)	75		70 - 130	08/0	08/22 13:00	08/10/22 06:38	1

Lab Sample ID: LCS 880-31767/1-A

Matrix: Solid

Analysis Batch: 31850

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31767

	<b>Spike</b>	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08434		mg/Kg		84	70 - 130	
Toluene	0.100	0.08825		mg/Kg		88	70 - 130	
Ethylbenzene	0.100	0.08741		mg/Kg		87	70 - 130	
m-Xylene & p-Xylene	0.200	0.1767		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.09757		mg/Kg		98	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	136	S1+	70 - 130
1,4-Difluorobenzene (Surr)	81		70 - 130

Lab Sample ID: LCSD 880-31767/2-A

**Matrix: Solid** 

Analysis Batch: 31850

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

Prep Type: Total/NA

Prep Batch: 31767

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.08734		mg/Kg		87	70 - 130	3	35	
Toluene	0.100	0.08876		mg/Kg		89	70 - 130	1	35	
Ethylbenzene	0.100	0.08917		mg/Kg		89	70 - 130	2	35	
m-Xylene & p-Xylene	0.200	0.1831		mg/Kg		92	70 - 130	4	35	
o-Xylene	0.100	0.09964		mg/Kg		100	70 - 130	2	35	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	131	S1+	70 - 130
1.4-Difluorobenzene (Surr)	84		70 - 130

Lab Sample ID: 890-2704-A-1-H MS

**Matrix: Solid** 

Analysis Batch: 31850

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

Prep Batch: 31767

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U F1	0.100	0.09552		mg/Kg		95	70 - 130	
Toluene	< 0.00199	U	0.100	0.09509		mg/Kg		95	70 - 130	

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Prep Batch: 31767

# QC Sample Results

Client: Ensolum Job ID: 890-2726-1 Project/Site: Goldenchild CTB SDG: 03E1558015

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

Lab Sample ID: 890-2704-A-1-H MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 31850

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00199	U	0.100	0.09336		mg/Kg		93	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1888		mg/Kg		94	70 - 130	
o-Xylene	<0.00199	U	0.100	0.1014		mg/Kg		101	70 - 130	

MS MS

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

Lab Sample ID: 890-2704-A-1-I MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 31850** 

Prep Type: Total/NA Prep Batch: 31767 MSD MSD Sample Sample Spike RPD

Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits 0.0998 Benzene <0.00199 UF1 0.06812 F1 mg/Kg 68 70 - 130 33 35 0.0998 0.07008 70 Toluene <0.00199 mg/Kg 70 - 130 30 35 Ethylbenzene <0.00199 0.0998 0.07097 mg/Kg 71 70 - 130 27 35 U 0.200 0.1453 73 70 - 130 35 m-Xylene & p-Xylene <0.00398 U mg/Kg 26 0.0998 <0.00199 U 0.08021 80 70 - 130 23 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	140	S1+	70 - 130
1,4-Difluorobenzene (Surr)	84		70 - 130

Lab Sample ID: MB 880-31850/8 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 31850

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg			08/09/22 16:48	1
Toluene	<0.00200	U	0.00200	mg/Kg			08/09/22 16:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			08/09/22 16:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			08/09/22 16:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			08/09/22 16:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			08/09/22 16:48	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130		08/09/22 16:48	1
1,4-Difluorobenzene (Surr)	77		70 - 130		08/09/22 16:48	1

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

Lab Sample ID: MB 880-31577/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 31631** 

MB MB Result Qualifier RL Unit Prepared Gasoline Range Organics <50.0 U 50.0 mg/Kg 08/05/22 11:58 08/06/22 20:38

(GRO)-C6-C10

**Eurofins Carlsbad** 

Prep Batch: 31577

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M

# QC Sample Results

Job ID: 890-2726-1 Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558015

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

ab Sample ID: MB 880-31577/1-A	Client Sample ID: Method Blank
Matrix: Solid	Prep Type: Total/NA
Analysis Ratch: 31631	Prop Ratch: 31577

Analysis Batch: 31631 Prep Batch: 31577 MB MB Result Qualifier RL Unit D Prepared Dil Fac Analyte Analyzed

<50.0 U 50.0 08/05/22 11:58 08/06/22 20:38 Diesel Range Organics (Over mg/Kg C10-C28) 50.0 08/06/22 20:38 Oll Range Organics (Over C28-C36) <50.0 U 08/05/22 11:58 mg/Kg

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1-Chlorooctane 89 70 - 130 08/05/22 11:58 08/06/22 20:38 107 70 - 130 08/05/22 11:58 08/06/22 20:38 o-Terphenyl

Lab Sample ID: LCS 880-31577/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 31631 Prep Batch: 31577

LCS LCS Spike Analyte Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics 1000 922.7 92 70 - 130 mg/Kg (GRO)-C6-C10 1000 901.7 Diesel Range Organics (Over 90 70 - 130mg/Kg C10-C28)

LCS LCS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 93 o-Terphenyl 96 70 - 130

Lab Sample ID: LCSD 880-31577/3-A Client Sample ID: Lab Control Sample Dup Matrix: Solid

Prep Type: Total/NA **Analysis Batch: 31631** Prep Batch: 31577

Spike LCSD LCSD %Rec **RPD** Result Qualifier RPD Limit Analyte Added Unit D %Rec Limits 1000 905.4 91 70 - 130 20 Gasoline Range Organics mg/Kg 2 (GRO)-C6-C10 Diesel Range Organics (Over 1000 879.0 mg/Kg 88 70 - 130 3 20 C10-C28)

LCSD LCSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 91 70 - 130 o-Terphenyl 95 70 - 130

Lab Sample ID: 890-2723-A-1-C MS Client Sample ID: Matrix Spike

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 31631 Prep Batch: 31577

%Rec Sample Sample Spike MS MS Result Qualifier Added Qualifier Analyte Result Unit %Rec Limits U Gasoline Range Organics <49.9 999 1016 100 70 - 130mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 999 962.5 mg/Kg 94 70 - 130

MS MS %Recovery Surrogate Qualifier Limits 89 70 - 130 1-Chlorooctane 70 - 130 90 o-Terphenyl

**Eurofins Carlsbad** 

C10-C28)

Lab Sample ID: 890-2723-A-1-D MSD

Job ID: 890-2726-1

981.9

mg/Kg

Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558015

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

Client Sample ID: Matrix Spike Duplicate

96

Prep Type: Total/NA Prep Batch: 31577

70 - 130

2

Analysis Batch: 31631 Sample Sample Spike MSD MSD RPD Result Qualifier RPD Limit Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <49.9 U 999 1031 mg/Kg 101 70 - 130 20 (GRO)-C6-C10

999

C10-C28)

**Matrix: Solid** 

MSD MSD

<49.9 U

Surrogate	%Recovery Qua	lifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	91		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31560/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31932** 

Diesel Range Organics (Over

мв мв

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	5.00	mg/Kg			08/11/22 13:38	1

Lab Sample ID: LCS 880-31560/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31932** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	248.4		mg/Kg		99	90 - 110	

Lab Sample ID: LCSD 880-31560/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

**Analysis Batch: 31932** 

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	248.0		mg/Kg		99	90 - 110	0	20	

Lab Sample ID: 890-2722-A-12-B MS

**Matrix: Solid** 

**Analysis Batch: 31932** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	200		250	458.6		mg/Kg		104	90 - 110	

Lab Sample ID: 890-2722-A-12-C MSD

**Matrix: Solid** 

**Analysis Batch: 31932** 

_	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	200		250	475.0		mg/Kg		110	90 - 110	4	20

**Eurofins Carlsbad** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

# **QC Association Summary**

Client: Ensolum Job ID: 890-2726-1
Project/Site: Goldenchild CTB SDG: 03E1558015

**GC VOA** 

Prep Batch: 31767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2726-1	SW40	Total/NA	Solid	5035	
890-2726-2	FS14	Total/NA	Solid	5035	
890-2726-3	SW41	Total/NA	Solid	5035	
MB 880-31767/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31767/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31767/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2704-A-1-H MS	Matrix Spike	Total/NA	Solid	5035	
890-2704-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

**Analysis Batch: 31850** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2726-1	SW40	Total/NA	Solid	8021B	31767
890-2726-2	FS14	Total/NA	Solid	8021B	31767
890-2726-3	SW41	Total/NA	Solid	8021B	31767
MB 880-31767/5-A	Method Blank	Total/NA	Solid	8021B	31767
MB 880-31850/8	Method Blank	Total/NA	Solid	8021B	
LCS 880-31767/1-A	Lab Control Sample	Total/NA	Solid	8021B	31767
LCSD 880-31767/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31767
890-2704-A-1-H MS	Matrix Spike	Total/NA	Solid	8021B	31767
890-2704-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31767

Analysis Batch: 31999

<b>Lab Sample ID</b> 890-2726-1	Client Sample ID SW40	Prep Type Total/NA	Matrix Solid	Method Total BTEX	Prep Batch
890-2726-2	FS14	Total/NA	Solid	Total BTEX	
890-2726-3	SW41	Total/NA	Solid	Total BTEX	

**GC Semi VOA** 

Prep Batch: 31577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2726-1	SW40	Total/NA	Solid	8015NM Prep	
890-2726-2	FS14	Total/NA	Solid	8015NM Prep	
890-2726-3	SW41	Total/NA	Solid	8015NM Prep	
MB 880-31577/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31577/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31577/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2723-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2723-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

**Analysis Batch: 31631** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2726-1	SW40	Total/NA	Solid	8015B NM	31577
890-2726-2	FS14	Total/NA	Solid	8015B NM	31577
890-2726-3	SW41	Total/NA	Solid	8015B NM	31577
MB 880-31577/1-A	Method Blank	Total/NA	Solid	8015B NM	31577
LCS 880-31577/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31577
LCSD 880-31577/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31577
890-2723-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	31577
890-2723-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31577

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# **QC Association Summary**

Client: Ensolum Job ID: 890-2726-1
Project/Site: Goldenchild CTB SDG: 03E1558015

# GC Semi VOA

## Analysis Batch: 31763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2726-1	SW40	Total/NA	Solid	8015 NM	
890-2726-2	FS14	Total/NA	Solid	8015 NM	
890-2726-3	SW41	Total/NA	Solid	8015 NM	

## **HPLC/IC**

## Leach Batch: 31560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2726-1	SW40	Soluble	Solid	DI Leach	
890-2726-2	FS14	Soluble	Solid	DI Leach	
890-2726-3	SW41	Soluble	Solid	DI Leach	
MB 880-31560/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31560/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31560/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2722-A-12-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2722-A-12-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## **Analysis Batch: 31932**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2726-1	SW40	Soluble	Solid	300.0	31560
890-2726-2	FS14	Soluble	Solid	300.0	31560
890-2726-3	SW41	Soluble	Solid	300.0	31560
MB 880-31560/1-A	Method Blank	Soluble	Solid	300.0	31560
LCS 880-31560/2-A	Lab Control Sample	Soluble	Solid	300.0	31560
LCSD 880-31560/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31560
890-2722-A-12-B MS	Matrix Spike	Soluble	Solid	300.0	31560
890-2722-A-12-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31560

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Date Received: 08/04/22 08:21

Job ID: 890-2726-1 Client: Ensolum Project/Site: Goldenchild CTB SDG: 03E1558015

Client Sample ID: SW40 Lab Sample ID: 890-2726-1 Date Collected: 08/03/22 10:55

**Matrix: Solid** 

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Prep 5035 5.01 g 5 mL 31767 08/08/22 13:00 MR **EET MID** Total/NA Analysis 8021B 1 31850 08/10/22 17:46 MR EET MID Total/NA Analysis Total BTEX 31999 08/11/22 11:16 SM **EET MID** 1 8015 NM Total/NA Analysis 1 31763 08/08/22 12:38 SM **EET MID** 8015NM Prep 31577 08/05/22 11:58 EET MID Total/NA 10.00 g 10 mL DM Prep Total/NA Analysis 8015B NM 31631 08/06/22 23:31 SM **EET MID** Soluble 50 mL 31560 08/05/22 10:32 СН Leach DI Leach 4.95 g FFT MID Soluble Analysis 300.0 1 31932 08/11/22 18:24 СН **EET MID** 

Client Sample ID: FS14 Lab Sample ID: 890-2726-2

Date Collected: 08/03/22 15:50 Matrix: Solid Date Received: 08/04/22 08:21

Dil Initial Final Batch Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Lab **Analyst** Total/NA Prep 5035 4.98 g 31767 08/08/22 13:00 MR EET MID 5 mL 8021B Total/NA Analysis 1 31850 08/10/22 18:13 MR **EET MID** Total/NA Total BTEX 31999 08/11/22 11:16 Analysis 1 SM **EET MID** Total/NA Analysis 8015 NM 31763 08/08/22 12:38 SM **EET MID** Total/NA 8015NM Prep 10.01 g 31577 08/05/22 11:58 DM **EET MID** Prep 10 mL Total/NA Analysis 8015B NM 31631 08/06/22 23:52 SM **EET MID** Soluble 08/05/22 10:32 DI Leach 5.03 g 50 mL 31560 CH **EET MID** Leach Soluble Analysis 300.0 1 31932 08/11/22 18:33 СН **EET MID** 

Client Sample ID: SW41 Lab Sample ID: 890-2726-3 Date Collected: 08/03/22 15:40

Date Received: 08/04/22 08:21

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	31767	08/08/22 13:00	MR	EET MID
Total/NA	Analysis	8021B		1			31850	08/10/22 18:39	MR	EET MID
Total/NA	Analysis	Total BTEX		1			31999	08/11/22 11:16	SM	EET MID
Total/NA	Analysis	8015 NM		1			31763	08/08/22 12:38	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31577	08/05/22 11:58	DM	EET MID
Total/NA	Analysis	8015B NM		1			31631	08/07/22 00:13	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	31560	08/05/22 10:32	CH	EET MID
Soluble	Analysis	300.0		1			31932	08/11/22 18:43	CH	EET MID

**Laboratory References:** 

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

**Eurofins Carlsbad** 

**Matrix: Solid** 

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2726-1
Project/Site: Goldenchild CTB SDG: 03E1558015

## **Laboratory: Eurofins Midland**

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

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>
Texas	NE	ELAP	T104704400-22-24	06-30-23
The following analytes	are included in this report, bu	It the laboratory is not certifi	ed by the governing authority. This list ma	av include analytes for
the agency does not of	fer certification.	•	, , ,	·, ·····
the agency does not of Analysis Method	fer certification.  Prep Method	Matrix	Analyte	,
0 ,		Matrix Solid	Analyte Total TPH	

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# **Method Summary**

Job ID: 890-2726-1 Client: Ensolum SDG: 03E1558015 Project/Site: Goldenchild CTB

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

**Eurofins Carlsbad** 

# **Sample Summary**

Client: Ensolum

Project/Site: Goldenchild CTB

Job ID: 890-2726-1

SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	D
890-2726-1	SW40	Solid	08/03/22 10:55	08/04/22 08:21	0 - 9
890-2726-2	FS14	Solid	08/03/22 15:50	08/04/22 08:21	9
890-2726-3	SW41	Solid	08/03/22 15:40	08/04/22 08:21	0 - 9

Revised Date 08/25/2020 Rev 2020

Date/Time

Received by: (Signature)

Relinquished by: (Signature)

Date/Time ·4.33

, Received by: (Signature)

Relinquished by: (Signature)

# Chain of Custody

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 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Environment Testing

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Work Order No:

									www.xenco.com	om rage of
Project Manager: Kale	Kalei Jennings			Bill to: (if different)	ent)	Garrett Green	Sreen		Work Orde	Work Order Comments
Company Name: Ens	Ensolum			Company Name	me:	XTO Energy	ergy		Program: UST/PST   PRP Bro	Program: UST/PST 🗌 PRP 🗍 Brownflelds 📙 RRC 📋 Superfund 🗍
	3122 National Parks Hwy	Hwy		Address:		3104 Ea	3104 East Green St.		State of Project:	
te ZIP:	Carlsbad, NM 88220			City, State ZIP:	ė.	Cartsbac	Carlsbad, NM 88220		Reporting: Level II	PST/UST ☐ TRRP ☐ Level IV ☐
Phone: 303	303-887-2946		Email:	Email: kjennings@ensolum.com	ensolum	com			Deliverables: EDD Deliverables	ADaPT ☐ Other:
Project Name:	Goldenchild CTB	STB	Turn	Turn Around				ANALYSIS REQUEST	<b>LEQUEST</b>	Preservative Codes
Project Number:	03E1558015	15	✓ Routine	□ Rush	Pres.					None: NO DI Water: H <sub>2</sub> O
Project Location:			Due Date:							-
Sampler's Name:	Conner Shore	re	TAT starts th	TAT starts the day received by	ýc				-	
PO#:			the lab, if rec	the lab, if received by 4:30pm	_					H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub> NaOH: Na
SAMPLE RECEIPT	Temp Blank:	oN (say)	Wet Ice:	ON (38)	əşəu	(0				H₃PO₄: HP
Samples Received Intact:	ļ	Thermometer ID:	er ID:	WW-00-7		300				NaHSO4: NABIS
Cooler Custody Seals:	Yes No MA	MA Correction Factor:	actor:	C.0-		: <b>A</b> 9				Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>
Sample Custody Seals:	Yes No NULA	NUA Temperature Reading:	e Reading:	(35 3.		3) S		Ren-2726 Chain of Custody	of Custody	Zn Acetate+NaOH: Zn
Total Containers:		Corrected T	Corrected Temperature:	Ś	d		-	200		NaOH+Ascorbic Acid: SAPC
Sample Identification	ation Matrix	Date Sampled	Time	Depth Grab/	b/ # of np Cont	снгов	) H9T ) X3T8			Sample Comments
SW40	S	08.03.22	1055	O-9,	1	×	×			NAPP2035526230,
FS14	တ	08.03.22	1558	.6	1	×	×			NAPP2102237559. NAPP2101355437 &
SW41	တ	08.03.22	1540	O-9,	1	×	×			NAPP2101331137
										Cost Center: 105575001
		\	\	/						
	1									AFE:
\	/									
1										
1										
Total 200.7 / 6010	200.8 / 6020:	8	BRCRA 13PPM	PPM Texas 11	₹	sb As	Sb As Ba Be B Cd Ca Cr	d Ca Cr Co Cu Fe	Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr	TI Sn L
Circle Method(s) and Metal(s) to be analyzed	fetal(s) to be analy	/zed	TCLP / SPLP		5010: 8RCRA	Sb As	Ba Be Co	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 docur	ment and relinquishmen	t of samples cor	stitutes a valid	purchase order	rom client c	ompany to	Eurofins Xen	o, its affiliates and subcontrac	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 of Eurofins Xenco. A minimum	il be liable only for the control of the control of \$85.00 will be	ost of samples a e applied to each	nd shall not ass	ume any respon tharge of \$5 for e	sibility for a ach sample	submitted	r expenses in to Eurofins X	urred by the client if such loss nco, but not analyzed. These to	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 circumssances beyond me control of Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotialed of Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotialed	paq.

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2726-1 SDG Number: 03E1558015

List Source: Eurofins Carlsbad

Login Number: 2726 List Number: 1 Creator: Clifton, Cloe

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

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# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2726-1 SDG Number: 03E1558015

List Source: Eurofins Midland

List Number: 2

List Creation: 08/05/22 10:35 AM

Creator: Rodriguez, Leticia

Login Number: 2726

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



APPENDIX C

**NMOCD Notifications** 

From: Green, Garrett J

To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD

 Cc:
 Tacoma Morrissey; Kalei Jennings; DelawareSpills /SM

 Subject:
 XTO - Sampling Notification (Week of 8/1/22 - 8/5/22)

**Date:** Friday, July 29, 2022 4:11:00 PM

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

All,

XTO plans to complete final sampling activities at the following sites the week of August 1, 2022.

# Monday

- PLU C1 Frac Pond / NAPP2207743395
- BEU Connector PW Booster / nAPP2213151424

## Tuesday

- BEU Connector PW Booster / nAPP2213151424
- Goldenchild CTB / nAPP2035256230, nAPP2102237559, nAPP2101335437, & nAPP2101331137

## Wednesday

- BEU Connector PW Booster / nAPP2213151424
- Ross Draw 25 NW Battery / NAPP2201444794

## Thursday

- PLU 89 / NRM1932350962

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

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

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 209076

## **CONDITIONS**

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	209076
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created By	Condition	Condition Date
amaxwell	None None	4/20/2023