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Incident ID NAPP2217544243
District RP
Facility ID
Application ID

## Closure

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

Closure Report Attachment Checklist: Each of the following	items must be included in the closure report.	
Photographs of the remediated site prior to backfill or photos must be notified 2 days prior to liner inspection)	s of the liner integrity if applicable (Note: appropriate OCD District office	
☐ Laboratory analyses of final sampling (Note: appropriate OD	C District office must be notified 2 days prior to final sampling)	
□ Description of remediation activities		
and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and rehuman health or the environment. In addition, OCD acceptance of	ations. The responsible party acknowledges they must substantially onditions that existed prior to the release or their final land use in DCD when reclamation and re-vegetation are complete.  Title: _Environmental Coordinator	
OCD Only  Jocelyn Harimon  Received by:	09/07/2022 Date:	
	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible for regulations.	
Closure Approved by: Robert Hamlet	Date: 12/6/2022	
Printed Name: Robert Hamlet	Title: Environmental Specialist - Advanced	

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	NAPP2217544243
District RP	
Facility ID	
Application ID	

## **Release Notification**

#### **Responsible Party**

			ixesp	onsible I alt	$\mathcal{J}$	
Responsible Party XTO Energy O		OGRID	5380			
Contact Name Garrett Green		Contact T	Celephone 575-200-0729			
Contact email g	garrett.gree	en@exxonmobil.c	om	Incident #	‡ (assigned by OCD)	
			reet, Carlsbad, Ne	w Mexico, 88220		
			Location	of Release S	ource	
Latitude 32.210	)37		(NAD 83 in dec	Longitude cimal degrees to 5 decir		
Site Name Pol	ker Lake U	Jnit 20-24-30		Site Type	Tank Battery	
Date Release Di		06/10/2022		API# (if app		
Unit Letter	Section	Township	Range	Cour	nty	
В	20	24S	30E	Edd	dy	
		l(s) Released (Select a	ll that apply and attach	l Volume of	c justification for the volumes provided below)	
	Crude Oil Volume Released (bbls) 8.25		5	Volume Recovered (bbls) 8.25		
Produced Water Volume Released (bbls) 66.00		)	Volume Recovered (bbls) 66.00			
Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?		☐ Yes ☐ No				
Condensate Volume Released (bbls)			Volume Recovered (bbls)			
☐ Natural Gas	ral Gas Volume Released (Mcf)		Volume Recovered (Mcf)			
Other (descr	ribe)	Volume/Weight Released (provide units)		e units)	Volume/Weight Recovered (provide units)	
Cause of Releas	fluids.	A 48-hour liner in	spection notice wa	as sent to NMOCD	npermeable containment. A vacuum truck recovered all D Distrct 2. Liner was visually inspected and determined been retained for remediation purposes.	

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Was this a major	If YES, for what reason(s) does the respon	sible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?	A release greater than 25 barrels.	
19.13.29.7(A) NIVIAC:		
🗶 Yes 🗌 No		
If YES, was immediate n	otice given to the OCD? By whom? To wh	om? When and by what means (phone, email, etc)?
Yes, by Adrian Baker to o	ocd.enviro@state.nm.us; Bratcher, Mike, EM	INRD; Hamlet, Robert, EMNRD; NobuiJennifer, EMNRD on
Saturday, June 11, 2022 8	3:06 AM via email.	
	Initial Ro	esponse
The responsible	party must undertake the following actions immediatel	unless they could create a safety hazard that would result in injury
➤ The source of the rele	ease has been stopped.	
	as been secured to protect human health and	the environment.
-	•	ikes, absorbent pads, or other containment devices.
	ecoverable materials have been removed and	
	d above have <u>not</u> been undertaken, explain v	vny:
NA		
		emediation immediately after discovery of a release. If remediation
has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.		
	. , , , , , , , , , , , , , , , , , , ,	
		pest of my knowledge and understand that pursuant to OCD rules and actions and perform corrective actions for releases which may endanger
public health or the environ	ment. The acceptance of a C-141 report by the C	CD does not relieve the operator of liability should their operations have
		at to groundwater, surface water, human health or the environment. In responsibility for compliance with any other federal, state, or local laws
and/or regulations.	if a C 141 report does not reneve the operator of	responsionity for compliance with any other rederal, state, or local laws
Printed Name: Garrett G	reen	Title: SSHE Coordinator
, — t	Al-	
Signature:	M Siller	Date: 06/24/2022
email: garrett.green@exx	xonmobil.com	Telephone: 575-200-0729
Cinan.		reiephone.
OCD Only		
Received by:Jocelyr	n Harimon	Date:06/24/2022

Location:	Poker Lake Unit 20-24-30 Battery		
Spill Date:	6/10/2022		
	Area 1		
Approximate A	rea =	416.88	cu.ft.
VOLUME OF LEAK			
Total Crude Oil	=	8.25	bbls
Total Produced	Water =	66.00	bbls
TOTAL VOLUME OF LEAK			
<b>Total Crude Oi</b>	=	8.25	bbls
Total Produced	l Water =	66.00	bbls
TOTAL VOLUME RECOVERED			
<b>Total Crude Oi</b>	=	8.25	bbls
Total Produced	l Water =	66.00	bbls

	Page 5 of 1	32
Incident ID	NAPP2217544243	
District RP		
Facility ID		
Application ID		

#### **Site Assessment/Characterization**

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>&gt;100 (ft bgs)</u>	
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 vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.		
Characterization Report Checklist: Each of the following items must be included in the report.		
<ul> <li>         Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring well</li></ul>	ls.	
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		
Thotographs metading date and Olfs information  Topographic/Aerial maps		

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.

☐ Laboratory data including chain of custody

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Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Printed Name: _Garrett Green	_ Title: _Environmental Coordinator	
Signature:Sath Surr	Date:09/08/2022	
email: _garrett.green@exxonmobil.com	Telephone:575-200-0729	
OCD Only		
Received by: Jocelyn Harimon	Date: <u>09/07/2022</u>	

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	1 180 / 0/1
Incident ID	NAPP2217544243
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Application ID	

## Closure

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

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.		
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 OE	OC District office must be notified 2 days prior to final sampling)	
☐ Description of remediation activities		
and regulations all operators are required to report and/or file certa may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and re human health or the environment. In addition, OCD acceptance of	conditions. The responsible party acknowledges they must substantially conditions that existed prior to the release or their final land use in OCD when reclamation and re-vegetation are complete.  Title: _Environmental Coordinator	
OCD Only  Jocelyn Harimon  Received by:	09/07/2022 Date:	
	y of liability should their operations have failed to adequately investigate and e water, human health, or the environment nor does not relieve the responsible d/or regulations.	
Closure Approved by:	Date:	
Printed Name:	Title:	



September 8, 2022

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

Re: Closure Request

Poker Lake Unit 20-24-30

Incident Number NAPP2217544243

**Eddy County, New Mexico** 

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this Closure Request to document site assessment and soil sampling activities performed at the Poker Lake Unit 20-24-30 (Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil resulting from a release of crude oil and produced water within lined containment at the Site. Based on field observations, field screening activities, and laboratory analytical results, XTO is submitting this Closure Request and requesting no further action for Incident Number NAPP2217544243.

#### SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit B, Section 20, Township 24 South, Range 30 East, in Eddy County, New Mexico (32.18183° N, 103.83299°W) and is associated with oil and gas exploration and production operations on Federal Land managed by Bureau of Land Management (BLM).

On June 10, 2022, corrosion created a hole in the free-water knockout (FWKO) equipment resulting in the release of approximately 8.25 barrels (bbls) of crude oil and 66 barrels of produced water into the lined containment. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; all 74.25 bbls of fluid were recovered from within the lined containment. XTO immediately reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on June 11, 2022. A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II office. A liner integrity inspection was conducted by XTO personnel following the fluid recovery and upon inspection, the liner was determined to be insufficient. A Release Notification Form C-141 (Form C-141) was submitted to the NMOCD on June 24, 2022. The release was assigned Incident Number NAPP2217544243.

#### SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 601 N Marienfield Street #400 | Midland, TX 78209 | ensolum.com



Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on the nearest permitted well with depth to groundwater data. The nearest depth to groundwater well is New Mexico Office of the State Engineer (NMOSE) well C-03960 located is approximately 0.9 miles southeast of the Site and is depicted on Figure 1. The well has a recoreded depth to water of 250 feet bgs and a total depth of 475 feet bgs. The Well Record and Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 1,050 feet south of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

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

#### SITE ASSESSMENT ACTIVITIES

On July 28, 2022 and August 4, 2022, site assessment activities were conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. Four assessment samples (SS01 through SS04) were collected around the lined containment from a depth of 0.5 feet bgs to confirm the lateral extent of the release. Ensolum personnel then advanced one borehole (BH01) via hand-auger at the location of the tear in the liner identified during the liner integrity inspection. Soil from the borehole was field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips, respectively. Field screening results and observations from the borehole were documented on a lithologic/soil sampling log, which is included as Appendix B. Discrete delineation soil samples were collected from the borehole at depths ranging from 0.5 feet bgs to 7 feet bgs. The borehole was backfilled with soil removed and a XTO contractor repaired the tear in the liner. The borehole and soil sample locations are depicted on Figure 2. Photographic documentation was conducted during the Site visit. A photographic log is included in Appendix C.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

#### LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for the delineation soil samples from borehole BH01 indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure



Criteria. In addition, the terminal sample from the borehole, BH01B collected at 7 feet bgs is compliant with the most stringent Table 1 Closure Criteria. Laboratory analytical results for soil samples SS01 through SS04, collected around the containment, were compliant with the Site Closure Criteria and compliant with the most stringent Table 1 Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical report is included as Appendix D.

#### **CLOSURE REQUEST**

Following the failed liner integrity inspection at the Site, Ensolum personnel advanced one borehole (BH01) at the location of the tear in the liner to assess for the presence or absence of impacted soil resulting from the June 10, 2022, crude oil and produced water release within lined containment. Three delineation soil samples were collected from borehole BH01, at depths of approximately 0.5 feet bgs, 1-foot bgs and 7 feet bgs. Laboratory analytical results for the delineation soil samples indicated that benzene, BTEX, TPH-DRO/TPH-GRO, TPH and chloride concentrations were compliant with the Site Closure Criteria. Additionally, laboratory analytical results for soil samples SS01 through SS04, collected around the containment, were compliant with the most stringent Table 1 Closure Criteria. The release was contained laterally by the lined containment and all released fluids were recovered during initial response activities. The tear in the liner was subsequently repaired.

Based on initial response efforts, depth to groundwater greater than 100 feet bgs, and soil sample laboratory analytical results compliant with the Closure Criteria directly beneath the tear in the liner, XTO respectfully requests closure for Incident Number NAPP2217544243.

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

ashley L. ager

**Program Director** 

Ashley Ager, M.S., P.G.

Sincerely, **Ensolum, LLC** 

Tacoma Morrissey Senior Geologist

Garrett Green, XTO

Nouissey

Shelby Pennington, XTO Bureau of Land Management

Appendices:

CC:

Figure 1 Site Receptor Map

Figure 2 Delineation Soil Sample Locations
Table 1 Soil Sample Analytical Results

Appendix A Well Record and Log

Appendix B Lithologic Soil Sampling Logs

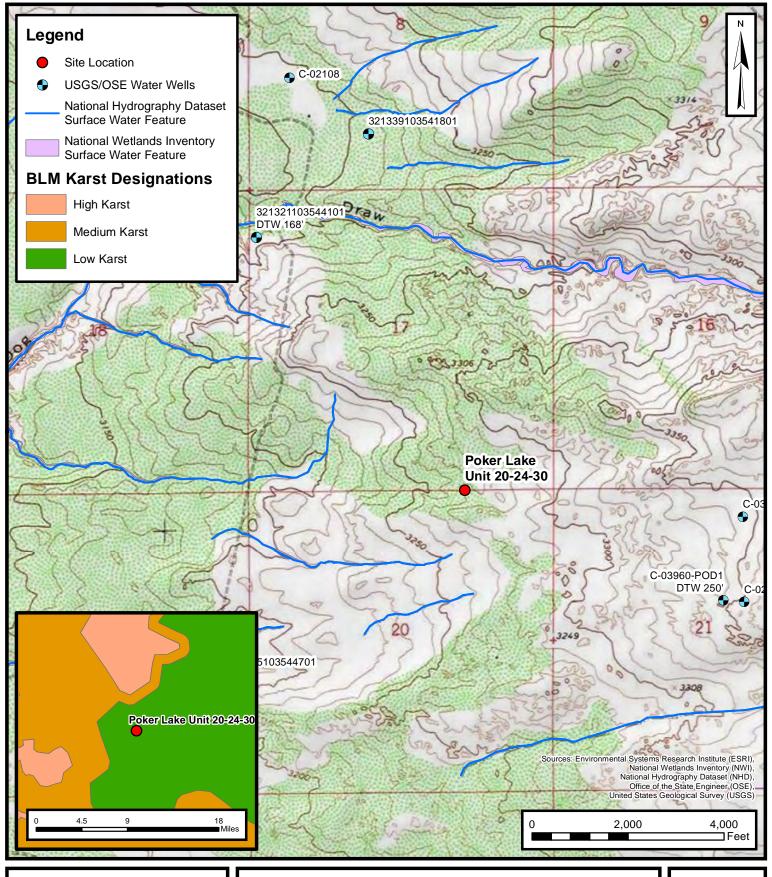
Appendix C Photographic Log

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

Appendix E NMOCD Notifications



**FIGURES** 

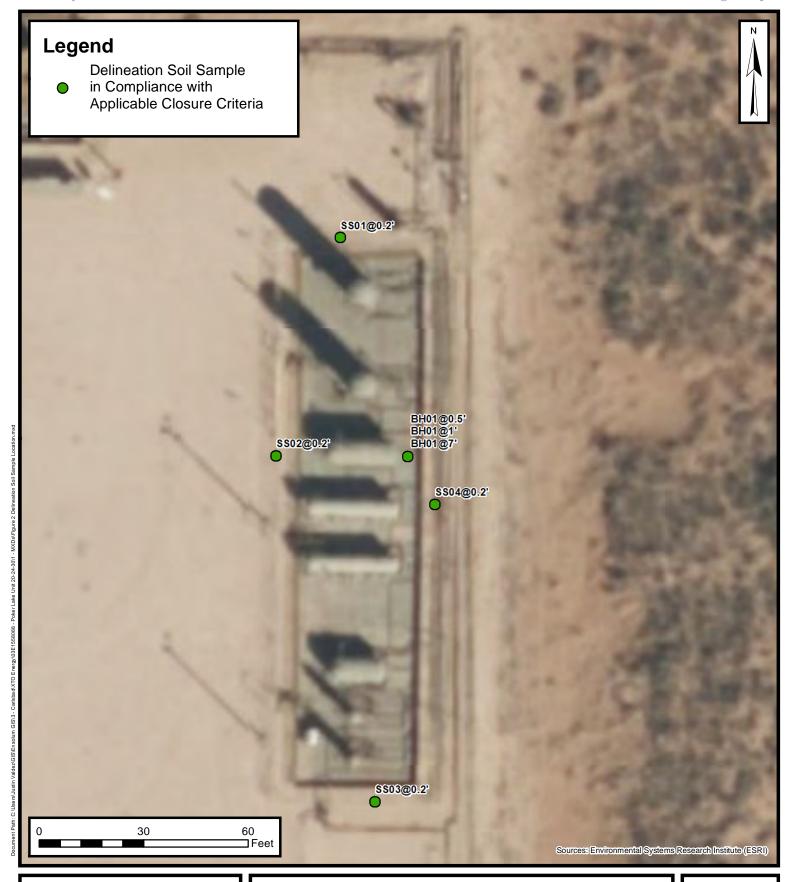




## **Site Location Map**

Poker Lake Unit 20-24-30 XTO Energy, Inc Incident Number NAPP2217544243 Unit B Sec 20 T24S and R30E Eddy County, NM FIGURE

1





## **Delineation Soil Sample Locations**

Poker Lake Unit 20-24-30 XTO Energy, Inc Incident Number NAPP2217544243 Unit B Sec 20 T24S and R30E Eddy County, NM FIGURE

2



**TABLES** 

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# TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS Poker Lake Unit 20-24-30

XTO Energy, Inc. Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Cl	osure Criteria (	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
	Delineation Soil Samples									
SS01	7/28/2022	0.2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	76.1
SS02	7/28/2022	0.2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	7.74
SS03	7/28/2022	0.2	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	68.5
SS04	7/28/2022	0.2	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	159
BH01	8/4/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	3,780
BH01A	8/4/2022	1	< 0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	1,100
BH01B	8/4/2022	7	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	215

#### Notes:

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

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in bold exceed the NMOCD Table 1 Closure Criteria or reclamation

standard where applicable.

GRO: Gasoline Range Organics DRO: Diesel Range Organics ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Ensolum 1 of 1



**APPENDIX A** 

Referenced Well Records

PAGE 1 OF 2



## WELL RECORD & LOG

#### OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

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-	SECTION	21 TOW	NSHIP 24 S. RAN	GE 30 S.							
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& CASING INFORMATION	DRILLING S	METHOD:	✓ ROTARY	HAMMER	CABLE TOOL	ОТН	ER -	SPECIFY:			E.
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ΨV	20	220	11		3/8 GRAV	ÆL .			93	POU	RED
AR	220	310	11		SILCA SA	MD			41	POUI	RED
3. Annular material	310	370	11		3/8 GRAY	ÆL			28	POUI	RED
VN	370	475	11		SILCA SA	ND			48	POUI	RED
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LOCATION 24 30

	DEPTH (	feet bgI)	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONI (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING
ļ			<u> </u>	TOPOOT		ZONES (gpm)
	0	1	1	TOPSOIL	YVN	
	1	42	41	SAND	YVN	<del> </del>
	42	182	140	SAND & SANDSTONE	YVN	
1	182	250	68	SAND & GRAVEL	N N	ļ
	250	402	152	FINE SAND	Y VN	
בו	402	460	58	SAND & GRAVEL	VY N	
4. HYDROGEOLOGIC LOG OF WELL	460	475	15	RED CLAY	YVN	
0.5					Y N	
Ĕ					Y N.	
2					K Y	
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]					Y N	DIG MON.
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					Y N	And the second s
					Y N	Time City
 	METHOD U	SED TO ES	TIMATE YIELD	OF WATER-BEARING STRATA:	TOTAL ESTIMATED	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	PUMP	Паі	R LIFT	BAILER OTHER - SPECIFY:	WELL YIELD (gpm):	
	•					
NO	WELL TEST	TEST I	RESULTS - ATTA TTIME, END TIM	ACH A COPY OF DATA COLLECTED DURING WELL TESTING, INC ME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OV.	CLUDING DISCHARGE ER THE TESTING PERI	METHOD, OD.
NOISIV	MISCELLAN	EOUS INF	ORMATION:			
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ns:						
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5. Test; Rig supei	DDINET MARK	E(e) OF DD	TIL DIC CIMED	VISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CON		
5.1	LVIIAI IAVIAI	e(s) of Dr	ILL NO SUPER	VISOR(5) THAT PROVIDED ONSITE SUPERVISION OF WELL CON	STRUCTION OTHER TI	HAN LICENSEE:
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TURE	CORRECT R	ECORD OF	THE ABOVE DI	ES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELI ESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL R DAYS AFTER COMPLETION OF WELL DRILLING:	EF, THE FOREGOING IS ECORD WITH THE STA	S A TRUE AND TE ENGINEER
6. SIGNATURE	gai	al .	Sau	JACOBO FRIESSEN	11-16-16	
	<u> </u>	SIGNATU	RE OF DRILLER	PRINT SIGNEE NAME	DATE	
	OSS INTERM				L RECORD & LOC (V.	

POD NUMBER

TRN NUMBER

PAGE 2 OF 2

23

FILE NUMBER

LOCATION



USGS Home Contact USGS Search USGS

#### **National Water Information System: Web Interface**

USGS Water Resources

Data Category: Geographic Area:

Groundwater

ata Category:	Geographic Area:		
Groundwater <	United States	~	GO

#### Click to hideNews Bulletins

- Explore the NEW <u>USGS National Water Dashboard</u> interactive map to access realtime water data from over 13,500 stations nationwide.
- Attention current WaterAlert users: NextGen WaterAlert is replacing Legacy WaterAlert. You must take action before 9/30/2022 to retain your alerts. Read more.
- Full News

#### Groundwater levels for the Nation

Important: <u>Next Generation Monitoring Location Page</u>

#### Search Results -- 1 sites found

site\_no list =

• 321321103544101

#### Minimum number of levels = 1

Save file of selected sites to local disk for future upload

#### USGS 321321103544101 24S.30E.18.22144

Available data for this site Groundwater: Field measurements V GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

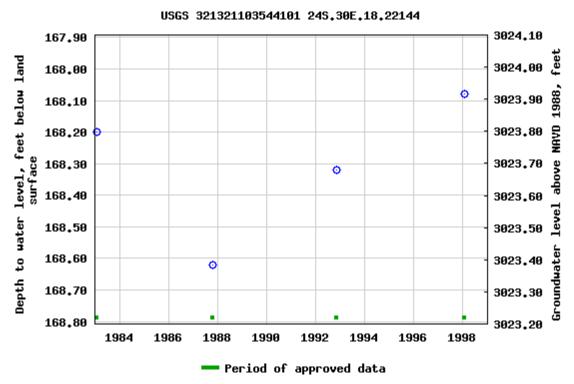
Latitude 32°13'21", Longitude 103°54'41" NAD27

Land-surface elevation 3,192 feet above NAVD88

This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.

#### **Output formats**

<u>Table of data</u>	
<u>Tab-separated data</u>	
Graph of data	
Reselect period	



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

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

Accessibility

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Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

**Title: Groundwater for USA: Water Levels** 

URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: <u>USGS Water Data Support Team</u>

Page Last Modified: 2022-08-29 16:02:22 EDT

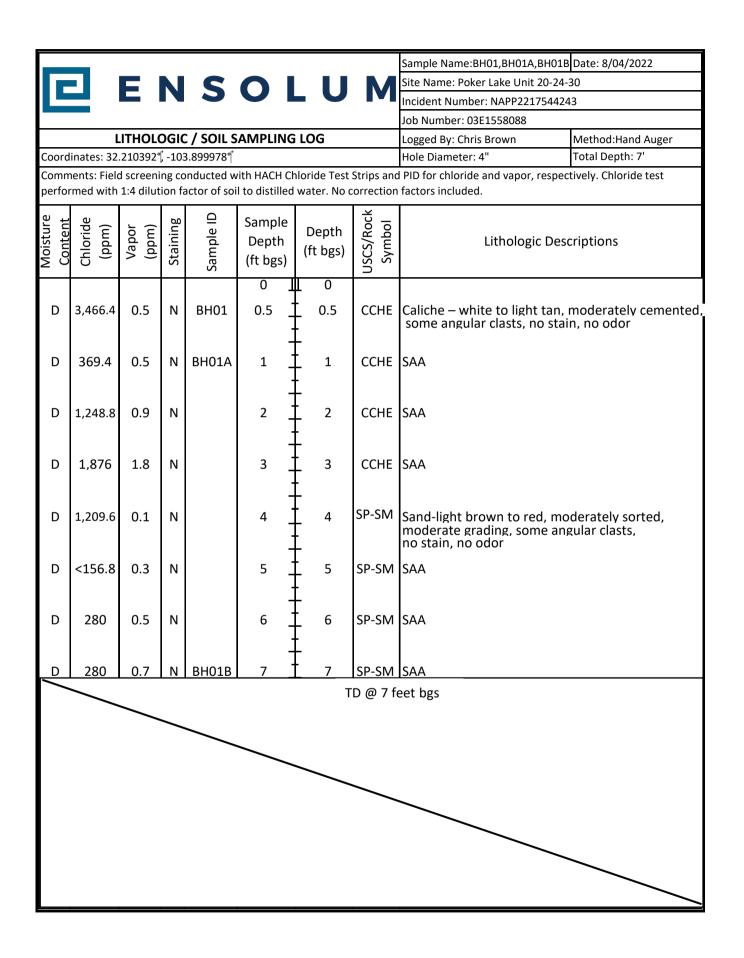
0.69 0.53 nadww01





**APPENDIX B** 

Lithologic Soil Sampling Logs





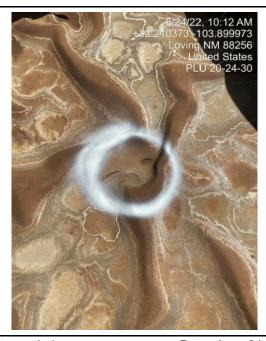
APPENDIX C

Photographic Log

## **ENSOLUM**

#### **Photographic Log**

XTO Energy, Inc.
Poker Lake Unit 20-24-30
Incident Number NAPP2217544243





Photograph 1 Date: June 24, 2022 Description: View of tear in liner discovered during liner inspection.

Photograph 2 Date: July 28, 2022
Description: View of lined containment showing no visible staining, facing southeast.



Photograph 3 Date: Aug 23, 2022
Description: View of liner patch. The patch is holding water following a recent rain.



Photograph 4 Date: Aug 23, 2022 Description: View of liner shoing no tears or holes, facing northeast.



APPENDIX D

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: 890-2676-1

Laboratory Sample Delivery Group: Eddy County NM

Client Project/Site: Pierce Canyon 20-24-30

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

RAMER

Authorized for release by: 8/8/2022 3:53:13 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum
Project/Site: Pierce Canyon 20-24-30
Laboratory Job ID: 890-2676-1
SDG: Eddy County NM

## **Table of Contents**

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Method Summary	17
Sample Summary	18
Chain of Custody	19
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#### **Definitions/Glossary**

Job ID: 890-2676-1 Client: Ensolum Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** LCS/LCSD RPD exceeds control limits. F1 MS and/or MSD recovery exceeds control limits.

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

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" Minimum Detectable Activity (Radiochemistry) MDA 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 QC **Quality Control** 

**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: Pierce Canyon 20-24-30

Job ID: 890-2676-1

SDG: Eddy County NM

Job ID: 890-2676-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2676-1

#### Receipt

The sample was received on 7/28/2022 1:50 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 10.4°C

#### **GC VOA**

Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-31335 and analytical batch 880-31540 recovered outside control limits for the following analytes: Ethylbenzene, m-Xylene & p-Xylene, o-Xylene and Xylenes, Total.

Method 8021B: Spike compounds were inadvertently omitted during the extraction process for the matrix spike duplicate (MSD); therefore, matrix spike duplicate recoveries are unavailable for preparation batch 880-31335 and analytical batch 880-31540. The associated laboratory control sample (LCS) met acceptance criteria.

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

#### GC Semi VOA

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.

Released to Imaging: 12/6/2022 8:18:26 AM

#### **Client Sample Results**

Client: Ensolum Job ID: 890-2676-1

Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

**Client Sample ID: SS01** Lab Sample ID: 890-2676-1 Date Collected: 07/28/22 12:10 Matrix: Solid

Date Received: 07/28/22 13:50 Sample Depth: 0.2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 19:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 19:35	1
Ethylbenzene	<0.00200	U *1	0.00200	mg/Kg		08/02/22 14:31	08/05/22 19:35	1
m-Xylene & p-Xylene	<0.00399	U *1	0.00399	mg/Kg		08/02/22 14:31	08/05/22 19:35	1
o-Xylene	<0.00200	U *1	0.00200	mg/Kg		08/02/22 14:31	08/05/22 19:35	1
Xylenes, Total	<0.00399	U *1	0.00399	mg/Kg		08/02/22 14:31	08/05/22 19:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			08/02/22 14:31	08/05/22 19:35	1
1,4-Difluorobenzene (Surr)	92		70 - 130			08/02/22 14:31	08/05/22 19:35	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			08/08/22 14:27	1
Analyte	Result	Qualifier	RL	Unit	D	Prepared	A a l a al	
							Analyzed	DII Fac
Total TPH	<49.9	U	49.9	mg/Kg			Analyzed 08/03/22 11:13	
Total TPH					_ =	Торигоа		
: Method: 8015B NM - Diesel Ran	ge Organics (D	RO) (GC)	49.9	mg/Kg	_ =	<u> </u>	08/03/22 11:13	1
Method: 8015B NM - Diesel Rang Analyte	ge Organics (Di	RO) (GC) Qualifier	49.9	mg/Kg	<u></u>	Prepared	08/03/22 11:13  Analyzed	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	ge Organics (D	RO) (GC) Qualifier	49.9	mg/Kg	_ =	<u> </u>	08/03/22 11:13	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10	ge Organics (Di	RO) (GC) Qualifier	49.9	mg/Kg  Unit  mg/Kg	_ =	Prepared	08/03/22 11:13  Analyzed	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	ge Organics (D Result <49.9	RO) (GC) Qualifier	49.9  RL 49.9	mg/Kg	_ =	Prepared 08/02/22 14:24	08/03/22 11:13  Analyzed  08/03/22 00:47	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	ge Organics (D Result <49.9	RO) (GC) Qualifier U	49.9  RL 49.9	mg/Kg  Unit  mg/Kg	_ =	Prepared 08/02/22 14:24	08/03/22 11:13  Analyzed  08/03/22 00:47	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)	ge Organics (D Result <49.9	RO) (GC) Qualifier U	49.9  RL 49.9  49.9	mg/Kg  Unit  mg/Kg  mg/Kg	_ =	Prepared 08/02/22 14:24 08/02/22 14:24	08/03/22 11:13  Analyzed 08/03/22 00:47 08/03/22 00:47	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	ge Organics (D) Result <49.9 <49.9	RO) (GC) Qualifier U	49.9  RL 49.9  49.9  49.9	mg/Kg  Unit  mg/Kg  mg/Kg	_ =	Prepared 08/02/22 14:24 08/02/22 14:24	08/03/22 11:13  Analyzed 08/03/22 00:47 08/03/22 00:47 08/03/22 00:47	Dil Fac
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	ge Organics (D Result <49.9 <49.9 <49.9 %Recovery	RO) (GC) Qualifier U	49.9  RL 49.9  49.9  49.9  Limits	mg/Kg  Unit  mg/Kg  mg/Kg	=	Prepared 08/02/22 14:24 08/02/22 14:24 08/02/22 14:24 Prepared	08/03/22 11:13  Analyzed 08/03/22 00:47 08/03/22 00:47 08/03/22 00:47  Analyzed	Dil Fac
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	ge Organics (D) Result <49.9 <49.9 <49.9  **Recovery** 79 90	RO) (GC) Qualifier U U Qualifier	49.9  RL 49.9  49.9  49.9  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg	=	Prepared 08/02/22 14:24 08/02/22 14:24 08/02/22 14:24  Prepared 08/02/22 14:24	08/03/22 11:13  Analyzed 08/03/22 00:47  08/03/22 00:47  Analyzed 08/03/22 00:47	Dil Fac
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	ge Organics (D)  Result  <49.9  <49.9  <49.9   **Recovery**  79  90  comatography -	RO) (GC) Qualifier U U Qualifier	49.9  RL 49.9  49.9  49.9  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg	=	Prepared 08/02/22 14:24 08/02/22 14:24 08/02/22 14:24  Prepared 08/02/22 14:24	08/03/22 11:13  Analyzed 08/03/22 00:47  08/03/22 00:47  Analyzed 08/03/22 00:47	Dil Fac

#### **Surrogate Summary**

Client: Ensolum Job ID: 890-2676-1 Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
90-2645-A-1-G MS	Matrix Spike	107	99	
90-2645-A-1-H MSD	Matrix Spike Duplicate	102	86	
90-2676-1	SS01	117	92	
90-2689-A-2-G MS	Matrix Spike	124	98	
90-2689-A-2-H MSD	Matrix Spike Duplicate	112	93	
.CS 880-31335/1-A	Lab Control Sample	116	100	
.CS 880-31573/1-A	Lab Control Sample	106	90	
.CSD 880-31335/2-A	Lab Control Sample Dup	106	98	
.CSD 880-31573/2-A	Lab Control Sample Dup	112	94	
MB 880-31335/5-A	Method Blank	99	89	
MB 880-31573/5-A	Method Blank	101	91	
Surrogate Legend				

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 Limits)
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2676-1	SS01	79	90	
890-2678-A-1-D MS	Matrix Spike	84	89	
890-2678-A-1-E MSD	Matrix Spike Duplicate	75	74	
LCS 880-31333/2-A	Lab Control Sample	84	87	
LCSD 880-31333/3-A	Lab Control Sample Dup	85	87	
MB 880-31333/1-A	Method Blank	100	119	
Surrogate Legend				
1CO = 1-Chlorooctane				

Client: Ensolum

Job ID: 890-2676-1

SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31335/5-A

Lab Sample ID: LCS 880-31335/1-A

Lab Sample ID: LCSD 880-31335/2-A

Project/Site: Pierce Canyon 20-24-30

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31335

	мв	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/02/22 14:31	08/05/22 11:25	1

MB MB

Surrogate	%Recovery Qua	ıalifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99	70 - 130	08/02/22 14:31	08/05/22 11:25	1
1,4-Difluorobenzene (Surr)	89	70 - 130	08/02/22 14:31	08/05/22 11:25	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 31335

Analysis Batch: 31540 LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1114 mg/Kg 111 70 - 130 Toluene 0.100 0.1046 mg/Kg 105 70 - 130 0.100 0.1239 Ethylbenzene mg/Kg 124 70 - 130 0.200 0.2398 120 70 - 130 m-Xylene & p-Xylene mg/Kg 0.100 0.1296 130 70 - 130 o-Xylene mg/Kg

LCS LCS

Surrogate	%Recovery G	Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

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

**Matrix: Solid** Analysis Batch: 31540

Prep Type: Total/NA Prep Batch: 31335

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08982		mg/Kg		90	70 - 130	21	35
Toluene	0.100	0.08489		mg/Kg		85	70 - 130	21	35
Ethylbenzene	0.100	0.08074	*1	mg/Kg		81	70 - 130	42	35
m-Xylene & p-Xylene	0.200	0.1641	*1	mg/Kg		82	70 - 130	38	35
o-Xylene	0.100	0.09044	*1	mg/Kg		90	70 - 130	36	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	106	70 - 130
1,4-Difluorobenzene (Surr)	98	70 - 130

Lab Sample ID: 890-2645-A-1-G MS

**Matrix: Solid** 

Analysis Batch: 31540

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

Prep Batch: 31335

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00202	U F1	0.101	0.1014		mg/Kg		101	70 - 130	
Toluene	<0.00202	U F1	0.101	0.09230		mg/Kg		91	70 - 130	

#### QC Sample Results

Client: Ensolum Job ID: 890-2676-1 Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

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

Lab Sample ID: 890-2645-A-1-G MS

Lab Sample ID: 890-2645-A-1-H MSD

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31335

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.00202 U \*1 F1 0.101 0.08894 88 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00403 U \*1 F1 0.201 0.1784 mg/Kg 87 70 - 130 0.101 o-Xylene 0.00264 \*1 F1 0.09574 mg/Kg 93 70 - 130

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	107	70 - 130
1,4-Difluorobenzene (Surr)	99	70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31335

**Matrix: Solid** Analysis Batch: 31540

Sample Sample Spike MSD MSD RPD Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec 0.0998 Benzene <0.00202 UF1 <0.00200 UF1 mg/Kg 0 70 - 130 NC 35 Toluene 0.0998 70 - 130 <0.00202 UF1 <0.00200 UF1 mg/Kg 0 NC 35 Ethylbenzene <0.00202 U \*1 F1 0.0998 <0.00200 UF1 mg/Kg 0 70 - 130 NC 35 <0.00403 U \*1 F1 0.200 <0.00399 UF1 0 70 - 130 NC 35 m-Xylene & p-Xylene mg/Kg 0.0998 NC 0.00264 \*1 F1 <0.00200 U F1 0 70 - 130 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	102	70 - 130
1.4-Difluorobenzene (Surr)	86	70 - 130

Lab Sample ID: MB 880-31573/5-A

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31573

MR	MR

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/05/22 11:19	08/06/22 00:00	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	08/05/22 11:19	08/06/22 00:00	1
1,4-Difluorobenzene (Surr)	91		70 - 130	08/05/22 11:19	08/06/22 00:00	1

Lab Sample ID: LCS 880-31573/1-A

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31573

	Spike	LCS	LCS			%Rec	
Analyte	Added	Result	Qualifier U	nit D	%Rec	Limits	
Benzene	0.100	0.09897	m	g/Kg	99	70 - 130	
Toluene	0.100	0.1022	m	g/Kg	102	70 - 130	
Ethylbenzene	0.100	0.1050	m	g/Kg	105	70 - 130	
m-Xylene & p-Xylene	0.200	0.2137	m	g/Kg	107	70 - 130	

Project/Site: Pierce Canyon 20-24-30

Client: Ensolum

Job ID: 890-2676-1

SDG: Eddy County NM

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

Lab Sample ID: LCS 880-31573/1-A **Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31573

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits D 0.100 0.1208 121 70 - 130 o-Xylene mg/Kg

LCS LCS

LCSD LCSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 106 70 - 130 70 - 130 1,4-Difluorobenzene (Surr) 90

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

**Matrix: Solid Analysis Batch: 31540** 

Lab Sample ID: LCSD 880-31573/2-A

Prep Batch: 31573

RPD RPD Limit

Analyte Added Result Qualifier Unit %Rec Limits D Benzene 0.100 0.09262 mg/Kg 93 70 - 130 35 Toluene 0.100 0.09534 mg/Kg 95 70 - 130 35 Ethylbenzene 0.100 0.1047 mg/Kg 105 70 - 130 0 35 0.200 m-Xylene & p-Xylene 0.2146 mg/Kg 107 70 - 130 0 35 0.100 0.1189 119 70 - 130 o-Xylene mg/Kg

Spike

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31573

Analysis Batch: 31540

**Matrix: Solid** 

**Matrix: Solid** 

Lab Sample ID: 890-2689-A-2-G MS

Lab Sample ID: 890-2689-A-2-H MSD

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U	0.101	0.09178		mg/Kg		91	70 - 130	
Toluene	<0.00200	U	0.101	0.1004		mg/Kg		100	70 - 130	
Ethylbenzene	<0.00200	U	0.101	0.1071		mg/Kg		107	70 - 130	
m-Xylene & p-Xylene	<0.00399	U	0.201	0.2218		mg/Kg		110	70 - 130	
o-Xylene	<0.00200	U	0.101	0.1258		mg/Kg		125	70 - 130	

MS MS

Surrogate %Recovery Qualifier Limits 70 - 130 4-Bromofluorobenzene (Surr) 124 70 - 130 1,4-Difluorobenzene (Surr) 98

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31573

Analysis Batch: 31540 Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Result Qualifier Limits Limit Analyte Unit %Rec RPD Benzene <0.00200 U 0.0998 0.08524 mg/Kg 85 70 - 130 35 <0.00200 U 0.0998 0.08780 70 - 130 Toluene 88 35 mg/Kg 13 Ethylbenzene <0.00200 U 0.0998 0.08996 mg/Kg 90 70 - 130 17 35 m-Xylene & p-Xylene <0.00399 U 0.200 0.1787 mg/Kg 90 70 - 13022 35 o-Xylene <0.00200 U 0.0998 0.1036 mg/Kg 104 70 - 130 19 35

Project/Site: Pierce Canyon 20-24-30

Client: Ensolum

Job ID: 890-2676-1

SDG: Eddy County NM

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

Lab Sample ID: 890-2689-A-2-H MSD

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31573

MSD MSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 112 70 - 130 1,4-Difluorobenzene (Surr) 93 70 - 130

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

Lab Sample ID: MB 880-31333/1-A Client Sample ID: Method Blank

**Matrix: Solid** 

**Analysis Batch: 31239** 

Prep Type: Total/NA

Prep Batch: 31333

мв мв

	141.0	1110						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		08/02/22 14:24	08/02/22 19:51	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		08/02/22 14:24	08/02/22 19:51	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/02/22 14:24	08/02/22 19:51	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	08/02/22 14:24	08/02/22 19:51	1
o-Terphenyl	119		70 - 130	08/02/22 14:24	08/02/22 19:51	1

Lab Sample ID: LCS 880-31333/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** 

**Analysis Batch: 31239** 

Prep Type: Total/NA

Prep Batch: 31333

	<b>Бріке</b>	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	1000	906.0		mg/Kg		91	70 - 130
(GRO)-C6-C10							
Diesel Range Organics (Over	1000	817.8		mg/Kg		82	70 - 130
C10-C28)							

Spike

Added

1000

LCSD LCSD

970.7

Result Qualifier

Unit

mg/Kg

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	84	70 - 130
o-Terphenyl	87	70 - 130

Lab Sample ID: LCSD 880-31333/3-A

**Matrix: Solid** 

Analysis Batch: 31239

Gasoline Range Organics

Analyte

(GRO)-C6-C10

Client Sample ID: Lab Control Sample Dup

88

Prep Type: Total/NA

Prep Batch: 31333

%Rec RPD %Rec Limits Limit 97 70 - 130 20

70 - 130

Diesel Range Organics (Over 1000 883.1 mg/Kg C10-C28) LCSD LCSD

Surrogate %Recovery Qualifier Limits 85 70 - 130 1-Chlorooctane o-Terphenyl 87 70 - 130

**Eurofins Carlsbad** 

20

Job ID: 890-2676-1

Client: Ensolum Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

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

Lab Sample ID: 890-2678-A-1-D MS

**Matrix: Solid** 

Analysis Batch: 31239

Client Sample ID: Matrix Spike

Prep Type: Total/NA Prep Batch: 31333

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<49.9	U	999	976.7		mg/Kg		96	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<49.9	U	999	862.4		mg/Kg		86	70 - 130	
C10 C28)										

Limits

C10-C28)

MS MS Qualifier Surrogate %Recovery 1-Chlorooctane 84

70 - 130 o-Terphenyl 89 70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31333

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Lab Sample ID: 890-2678-A-1-E MSD **Matrix: Solid** 

**Analysis Batch: 31239** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	876.2		mg/Kg		85	70 - 130	11	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	725.5		mg/Kg		73	70 - 130	17	20

MSD MSD %Recovery Qualifier Surrogate Limits 1-Chlorooctane 75 70 - 130 o-Terphenyl 74 70 - 130

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

Lab Sample ID: MB 880-31217/1-A

**Matrix: Solid** 

**Analysis Batch: 31435** 

MB MB

Analyte Result Qualifier RL Unit Dil Fac Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 08/04/22 14:26

Lab Sample ID: LCS 880-31217/2-A

**Matrix: Solid** 

**Analysis Batch: 31435** 

	Spi	ke LCS	LCS				%Rec	
Analyte	Add	ed Result	Qualifier	Unit	D	%Rec	Limits	
Chloride		50 238.5		mg/Kg		95	90 - 110	

Lab Sample ID: LCSD 880-31217/3-A

**Matrix: Solid** 

Analysis Batch: 31435

Alialysis Datcii. 31433								
	Spike	LCSD	LCSD			%Rec		RPD
Analyte	Added	Result	Qualifier L	Unit D	%Rec	Limits	RPD	Limit
Chloride	250	238.9	n	mg/Kg	96	90 - 110	0	20

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

**Prep Type: Soluble** 

**Prep Type: Soluble** 

# **QC Sample Results**

Client: Ensolum Job ID: 890-2676-1 Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2675-A-11-F MS

**Matrix: Solid** 

Analysis Batch: 31435

•	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	12.1		252	259.6		mg/Kg		98	90 - 110

Lab Sample ID: 890-2675-A-11-G MSD

**Matrix: Solid** 

Analysis Batch: 31435

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	12.1		252	265.0		mg/Kg		101	90 - 110	2	20

Page 12 of 21

# **QC Association Summary**

Client: Ensolum

Project/Site: Pierce Canyon 20-24-30

Job ID: 890-2676-1 SDG: Eddy County NM

GC VOA

Prep Batch: 31335

<b>Lab Sample ID</b> 890-2676-1	Client Sample ID SS01	Prep Type Total/NA	Matrix Solid	Method 5035	Prep Batch
MB 880-31335/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31335/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31335/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2645-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2645-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 31540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2676-1	SS01	Total/NA	Solid	8021B	31335
MB 880-31335/5-A	Method Blank	Total/NA	Solid	8021B	31335
MB 880-31573/5-A	Method Blank	Total/NA	Solid	8021B	31573
LCS 880-31335/1-A	Lab Control Sample	Total/NA	Solid	8021B	31335
LCS 880-31573/1-A	Lab Control Sample	Total/NA	Solid	8021B	31573
LCSD 880-31335/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31335
LCSD 880-31573/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31573
890-2645-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	31335
890-2645-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31335
890-2689-A-2-G MS	Matrix Spike	Total/NA	Solid	8021B	31573
890-2689-A-2-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31573

## Prep Batch: 31573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31573/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31573/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31573/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2689-A-2-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2689-A-2-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

# Analysis Batch: 31776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2676-1	SS01	Total/NA	Solid	Total BTEX	

## **GC Semi VOA**

### Analysis Batch: 31239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2676-1	SS01	Total/NA	Solid	8015B NM	31333
MB 880-31333/1-A	Method Blank	Total/NA	Solid	8015B NM	31333
LCS 880-31333/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31333
LCSD 880-31333/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31333
890-2678-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	31333
890-2678-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31333

### Prep Batch: 31333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2676-1	SS01	Total/NA	Solid	8015NM Prep	
MB 880-31333/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31333/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31333/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2678-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	

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4

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13

# **QC Association Summary**

Client: Ensolum Job ID: 890-2676-1
Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

# GC Semi VOA (Continued)

## Prep Batch: 31333 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2678-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 31406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2676-1	SS01	Total/NA	Solid	8015 NM	

# HPLC/IC

#### Leach Batch: 31217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2676-1	SS01	Soluble	Solid	DI Leach	
MB 880-31217/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31217/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31217/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2675-A-11-F MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2675-A-11-G MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 31435**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2676-1	SS01	Soluble	Solid	300.0	31217
MB 880-31217/1-A	Method Blank	Soluble	Solid	300.0	31217
LCS 880-31217/2-A	Lab Control Sample	Soluble	Solid	300.0	31217
LCSD 880-31217/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31217
890-2675-A-11-F MS	Matrix Spike	Soluble	Solid	300.0	31217
890-2675-A-11-G MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31217

### **Lab Chronicle**

Client: Ensolum Job ID: 890-2676-1 Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

**Client Sample ID: SS01** 

Lab Sample ID: 890-2676-1

Matrix: Solid

Date Collected: 07/28/22 12:10 Date Received: 07/28/22 13:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	31335	08/02/22 14:31	MR	EETSC MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31540	08/05/22 19:35	MR	EETSC MIC
Total/NA	Analysis	Total BTEX		1			31776	08/08/22 14:27	SM	EETSC MIC
Total/NA	Analysis	8015 NM		1			31406	08/03/22 11:13	SM	EETSC MIE
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	31333	08/02/22 14:24	DM	EETSC MIE
Total/NA	Analysis	8015B NM		1			31239	08/03/22 00:47	SM	EETSC MIC
Soluble	Leach	DI Leach			5.03 g	50 mL	31217	08/01/22 16:05	SMC	EETSC MIE
Soluble	Analysis	300.0		1			31435	08/04/22 17:40	CH	EETSC MIC

#### **Laboratory References:**

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

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2676-1 Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

### **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**

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.

Client: Ensolum

Method

8021B

Total BTEX 8015 NM

8015B NM

8015NM Prep

**Protocol References:** 

Laboratory References:

ASTM = ASTM International

DI Leach

300.0

5035

Project/Site: Pierce Canyon 20-24-30

**Method Description** 

**Total BTEX Calculation** 

Microextraction

Volatile Organic Compounds (GC)

Diesel Range Organics (DRO) (GC)

Diesel Range Organics (DRO) (GC)

Deionized Water Leaching Procedure

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

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

Anions, Ion Chromatography

Closed System Purge and Trap

Job ID: 890-2676-1

EETSC MID

SDG: Eddy County NM

Protocol

SW846

TAL SOP

SW846

SW846

SW846

SW846

ASTM

MCAWW

_		
	Laboratory	
	EETSC MID	
	EETSC MID	

EETSC MID EETSC MID EETSC MID EETSC MID EETSC MID

# **Sample Summary**

Client: Ensolum

Job ID: 890-2676-1 Project/Site: Pierce Canyon 20-24-30 SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2676-1	SS01	Solid	07/28/22 12:10	07/28/22 13:50	0.2

Page\_

Work Order No:

Revised Date 08/25/2020 Rev 2020.

Date/Time

Received by: (Signature)

Relinquished by: (Signature)

Date/Time Se.33

eived by: (Signature)

Relinquished by: (Signature)

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.

Chain of Custody

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

**Environment Testing** 

💸 eurofins

Xenco

0	1	11.11	Dill to: (16 different)	1 - Joseph	1000	Work Ord	Work Order Comments
Project Manager:	and a land	Dirized		XTO	M 5 CM	Program: UST/PST   PRP	Brownfields RRC Superfund
Address:	10) Mart	2 Lake	Address	700 601	25.000	- Oje	
City, State ZIP:	C1562 11	N 88220	City, State ZIP:	Lecobed 1	VM \$8220	Reporting: Level!!   Level!!	☐ PST/UST ☐ TRRP ☐ Level IV ☐
Phone:	7-251	-8637 Em	Email: TMON SE	monifeer Persolve, com	-	Deliverables: EDD	ADaPT ☐ Other:
Protect Name:	Port Comos 1	500 - 10 24-30	Fam Around		ANALYSIS REQUEST	ST	Preservative Codes
er:	-	108% Routine	Rush	Pres. Code			None: NO DI Water: H <sub>2</sub> O
Project Location:	100 C.	Due Date:	à				Cool: Cool MeOH: Me
Sampler's Name:	18	TAT starts	TAT starts the day received by		_		
PO #:	4	the lab, ii	the lab, if received by 4:30pm	S			H <sub>2</sub> SO 4: H <sub>2</sub> NaOH: Na
SAMPLE RECEIPT	Temp Blank:	Yes No Wet Ice:	(Yes)No	nətə:			H₃PO ₄: HP
Samples Received Intact:	(Yes) No	Thermometer ID:	TWW.007	men			NaHSO 4: NABIS
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	0-0-	ed			Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO 3
Sample Custody Seals:	Yes No N/A	Temperature Reading:	10.6	7	890-2676 Chain of Custody	f Custody	Zn Acetate+NaOH: Zn
Total Containers:		Corrected Temperature:	e:   D · L	40	-	-	NaOH+Ascorbic Acid: SAPC
Sample Identification	ion Matrix	Date Time Sampled	Depth Grab/	# of Count			Sample Comments
1988	^	72% MC	2 2 6	111			A Tre 70
							NAPP 2217544245
							1001001801
			+				000
Total 200.7 / 6010 200.8 / 6020:	200.8 / 6020: Metal(s) to be ana	8RCR.	Texas 11	Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo No 18RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	Cr Co Cu Fe Pb Mg	Ni K Se	Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Hg: 1631/245.1/7470 /7471
	אובומווא וכן מוומ		2000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			

# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-2676-1

SDG Number: Eddy County NM

List Source: Eurofins Carlsbad

Login Number: 2676 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	

, 132

8/8/2022

## **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-2676-1

SDG Number: Eddy County NM

List Source: Eurofins Midland

List Creation: 08/01/22 08:22 AM

Login Number: 2676 List Number: 2

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	

4

2

10

12

13

14

<6mm (1/4").



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2677-1

Laboratory Sample Delivery Group: 03e1558088 Client Project/Site: Pierce Canyon 20-24-30

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

RAMER

Authorized for release by: 8/5/2022 12:12:50 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum
Project/Site: Pierce Canyon 20-24-30
Laboratory Job ID: 890-2677-1
SDG: 03e1558088

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# **Definitions/Glossary**

Job ID: 890-2677-1 Client: Ensolum Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

#### **Qualifiers**

<b>GC VOA</b>	
Qualifier	

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.

LCS/LCSD RPD exceeds control limits. U

Ouglifier Description

Indicates the analyte was analyzed for but not detected.

#### **GC Semi VOA**

Qualifier **Qualifier Description** 

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

#### HPLC/IC

Qualifier **Qualifier Description** 

U Indicates the analyte was analyzed for but not detected.

### **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this repor
Abbreviation	These commonly used abbreviations may or may not be present in this repo

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery Contains Free Liquid CFL CFU Colony Forming Unit Contains No Free Liquid **CNF** 

Duplicate Error Ratio (normalized absolute difference) DER

Dil Fac Dilution Factor

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) Limit of Quantitation (DoD/DOE) LOQ

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 MOI 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

**Practical Quantitation Limit PQL** 

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

Relative Error Ratio (Radiochemistry) **RER** 

Reporting Limit or Requested Limit (Radiochemistry) RL

**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

Job ID: 890-2677-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

Job ID: 890-2677-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2677-1

#### Receipt

The sample was received on 7/28/2022 1:50 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 10.4°C

#### **GC VOA**

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-31337 and analytical batch 880-31375 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

#### GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: SS02 (890-2677-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### HPLC/IC

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

**Eurofins Carlsbad** 8/5/2022

# **Client Sample Results**

Client: Ensolum Job ID: 890-2677-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

**Client Sample ID: SS02** 

Lab Sample ID: 890-2677-1 Date Collected: 07/28/22 12:20 Matrix: Solid Date Received: 07/28/22 13:50

Sample Depth: 0.2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *- *1	0.00200	mg/Kg		08/02/22 14:44	08/04/22 03:22	
Toluene	<0.00200	U *- *1	0.00200	mg/Kg		08/02/22 14:44	08/04/22 03:22	,
Ethylbenzene	<0.00200	U *- *1	0.00200	mg/Kg		08/02/22 14:44	08/04/22 03:22	
m-Xylene & p-Xylene	<0.00399	U *- *1	0.00399	mg/Kg		08/02/22 14:44	08/04/22 03:22	
o-Xylene	<0.00200	U *+ *1	0.00200	mg/Kg		08/02/22 14:44	08/04/22 03:22	,
Xylenes, Total	<0.00399	U *1	0.00399	mg/Kg		08/02/22 14:44	08/04/22 03:22	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	121		70 - 130			08/02/22 14:44	08/04/22 03:22	
1,4-Difluorobenzene (Surr)	95		70 - 130			08/02/22 14:44	08/04/22 03:22	1
- Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			08/04/22 09:41	
Method: 8015 NM - Diesel Range Analyte	Result	Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg		<del></del>	00/00/00 44:40	
Made at 0045D NM Dis 15							08/03/22 11:13	•
Method: 8015B NM - Diesel Rand	ge Organics (D	RO) (GC)					08/03/22 11:13	•
	•	RO) (GC) Qualifier	RL	Unit	D	Prepared	08/03/22 11:13  Analyzed	Dil Fac
Analyte Gasoline Range Organics	•	Qualifier	<b>RL</b> 49.9	Unit mg/Kg	<u>D</u>	Prepared 08/02/22 08:40		Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result	Qualifier U			<u>D</u>	<u>·</u>	Analyzed	
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result   <49.9	Qualifier U	49.9	mg/Kg	<u>D</u>	08/02/22 08:40	Analyzed 08/02/22 14:30	
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result   <49.9   <49.9	Qualifier U	49.9	mg/Kg	<u>D</u>	08/02/22 08:40 08/02/22 08:40	Analyzed 08/02/22 14:30 08/02/22 14:30	
Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result   <49.9   <49.9   <49.9	Qualifier U U U	49.9 49.9 49.9	mg/Kg	<u>D</u>	08/02/22 08:40 08/02/22 08:40 08/02/22 08:40	Analyzed 08/02/22 14:30 08/02/22 14:30 08/02/22 14:30	
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result   <49.9   <49.9   <49.9   <49.9   %Recovery	Qualifier  U  U  Qualifier	49.9 49.9 49.9 <i>Limits</i>	mg/Kg	<u>D</u>	08/02/22 08:40 08/02/22 08:40 08/02/22 08:40 <b>Prepared</b>	Analyzed 08/02/22 14:30 08/02/22 14:30 08/02/22 14:30 Analyzed	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl  Method: 300.0 - Anions, Ion Chro	Result   <49.9   <49.9   <49.9   <49.9     <65   72	Qualifier  U  U  Qualifier  S1-	49.9 49.9 49.9  Limits 70 - 130	mg/Kg	<u> </u>	08/02/22 08:40 08/02/22 08:40 08/02/22 08:40  Prepared 08/02/22 08:40	Analyzed 08/02/22 14:30 08/02/22 14:30 08/02/22 14:30  Analyzed 08/02/22 14:30	Dil Fa
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result	Qualifier  U  U  Qualifier  S1-	49.9 49.9 49.9  Limits 70 - 130	mg/Kg	<u>D</u>	08/02/22 08:40 08/02/22 08:40 08/02/22 08:40  Prepared 08/02/22 08:40	Analyzed 08/02/22 14:30 08/02/22 14:30 08/02/22 14:30  Analyzed 08/02/22 14:30	Dil Fa

# **Surrogate Summary**

Job ID: 890-2677-1 Client: Ensolum Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Re
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2656-A-1-F MS	Matrix Spike	104	96	
890-2656-A-1-G MSD	Matrix Spike Duplicate	106	93	
890-2677-1	SS02	121	95	
LCS 880-31337/1-A	Lab Control Sample	113	93	
LCSD 880-31337/2-A	Lab Control Sample Dup	90	87	
MB 880-31323/5-A	Method Blank	106	87	
MB 880-31337/5-A	Method Blank	99	87	

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 Rec
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2677-1	SS02	65 S1-	72	
890-2686-A-1-C MS	Matrix Spike	97	97	
890-2686-A-1-D MSD	Matrix Spike Duplicate	84	82	
LCS 880-31286/2-A	Lab Control Sample	104	102	
LCSD 880-31286/3-A	Lab Control Sample Dup	104	108	
MB 880-31286/1-A	Method Blank	90	103	
Surrogate Legend				
1CO = 1-Chlorooctane				

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2677-1 SDG: 03e1558088 Project/Site: Pierce Canyon 20-24-30

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31323/5-A

**Analysis Batch: 31375** 

**Matrix: Solid** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31323

	MB	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/02/22 13:15	08/03/22 10:46	1

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prep	ared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	08/02/2	22 13:15	08/03/22 10:46	1
1,4-Difluorobenzene (Surr)	87		70 - 130	08/02/2	2 13:15	08/03/22 10:46	1

Lab Sample ID: MB 880-31337/5-A

Matrix: Solid

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31337

**Analysis Batch: 31375** мв мв

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200 U	0.00200	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Toluene	<0.00200 U	0.00200	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Ethylbenzene	<0.00200 U	0.00200	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
m-Xylene & p-Xylene	<0.00400 U	0.00400	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
o-Xylene	<0.00200 U	0.00200	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Xylenes, Total	<0.00400 U	0.00400	mg/Kg		08/02/22 14:44	08/03/22 21:53	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	08/02/22 14:44	08/03/22 21:53	1
1,4-Difluorobenzene (Surr)	87		70 - 130	08/02/22 14:44	08/03/22 21:53	1

Lab Sample ID: LCS 880-31337/1-A

**Matrix: Solid** 

**Analysis Batch: 31375** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 31337

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09999		mg/Kg		100	70 - 130	
Toluene	0.100	0.1031		mg/Kg		103	70 - 130	
Ethylbenzene	0.100	0.1082		mg/Kg		108	70 - 130	
m-Xylene & p-Xylene	0.200	0.2220		mg/Kg		111	70 - 130	
o-Xylene	0.100	0.1387	*+	mg/Kg		139	70 - 130	

LCS LCS

Surrogate	%Recovery Qual	lifier Limits
4-Bromofluorobenzene (Surr)	113	70 - 130
1,4-Difluorobenzene (Surr)	93	70 - 130

Lab Sample ID: LCSD 880-31337/2-A

Matrix: Solid

**Analysis Batch: 31375** 

Client Sample ID: Lab	Control Sample Dup
	Dren Times Tetal/NIA

Prep Type: Total/NA

Prep Batch: 31337

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.0998	0.05262	*- *1	mg/Kg		53	70 - 130	62	35

Project/Site: Pierce Canyon 20-24-30

Client: Ensolum

Job ID: 890-2677-1 SDG: 03e1558088

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

Lab Sample ID: LCSD 880-31337/2-A **Matrix: Solid** 

**Analysis Batch: 31375** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 31337

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Toluene	0.0998	0.06071	*- *1	mg/Kg		61	70 - 130	52	35
Ethylbenzene	0.0998	0.06794	*- *1	mg/Kg		68	70 - 130	46	35
m-Xylene & p-Xylene	0.200	0.1297	*- *1	mg/Kg		65	70 - 130	52	35
o-Xylene	0.0998	0.09111	*1	mg/Kg		91	70 - 130	41	35

LCSD LCSD

Surrogate	%Recovery Q	ualifier	Limits
4-Bromofluorobenzene (Surr)	90		70 - 130
1,4-Difluorobenzene (Surr)	87		70 - 130

Lab Sample ID: 890-2656-A-1-F MS

**Matrix: Solid** 

**Analysis Batch: 31375** 

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

Prep Batch: 31337

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U *- *1	0.101	0.08722		mg/Kg		87	70 - 130	
Toluene	< 0.00199	U *- *1	0.101	0.08202		mg/Kg		82	70 - 130	
Ethylbenzene	<0.00199	U *- *1	0.101	0.08158		mg/Kg		81	70 - 130	
m-Xylene & p-Xylene	<0.00398	U *- *1	0.201	0.1625		mg/Kg		81	70 - 130	
o-Xylene	<0.00199	U *+ *1	0.101	0.09304		mg/Kg		92	70 - 130	

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	96	70 - 130

Lab Sample ID: 890-2656-A-1-G MSD

**Matrix: Solid** 

**Analysis Batch: 31375** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31337

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00199	U *- *1	0.0998	0.09326		mg/Kg		93	70 - 130	7	35
Toluene	< 0.00199	U *- *1	0.0998	0.08591		mg/Kg		86	70 - 130	5	35
Ethylbenzene	< 0.00199	U *- *1	0.0998	0.08696		mg/Kg		87	70 - 130	6	35
m-Xylene & p-Xylene	<0.00398	U *- *1	0.200	0.1684		mg/Kg		84	70 - 130	4	35
o-Xylene	< 0.00199	U *+ *1	0.0998	0.09635		mg/Kg		97	70 - 130	3	35

MSD MSD

MD MD

Surrogate	%Recovery	Quaimer	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

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

Lab Sample ID: MB 880-31286/1-A

**Matrix: Solid** 

Analysis Batch: 31239

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

Prep Batch: 31286

	MID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		08/02/22 08:40	08/02/22 10:16	1
(CDO) C6 C40								

(GRO)-C6-C10

Client: Ensolum Job ID: 890-2677-1 SDG: 03e1558088 Project/Site: Pierce Canyon 20-24-30

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

Lab Sample ID: MB 880-31286/1-A **Matrix: Solid** 

Lab Sample ID: LCS 880-31286/2-A

**Matrix: Solid** 

Analysis Batch: 31239

**Analysis Batch: 31239** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31286

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		08/02/22 08:40	08/02/22 10:16	1
C10-C28) Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/02/22 08:40	08/02/22 10:16	1

MB MB

MB MB

	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1-Chlorooctane	90		70 - 130	08/02/22 08:40	08/02/22 10:16	1
l	o-Terphenyl	103		70 - 130	08/02/22 08:40	08/02/22 10:16	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 31286

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 1060 mg/Kg 106 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 1000 1036 104 70 - 130 mg/Kg C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	104		70 - 130
o-Terphenyl	102		70 - 130

Lab Sample ID: LCSD 880-31286/3-A

**Matrix: Solid** 

**Analysis Batch: 31239** 

Client Sample ID: Lab	<b>Control Sample Dup</b>
	Dron Types Total/NA

Prep Type: Total/NA Prep Batch: 31286

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	1063		mg/Kg		106	70 - 130	0	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	1092		mg/Kg		109	70 - 130	5	20	
C10-C28)										

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	104		70 - 130
o-Terphenyl	108		70 - 130

Lab Sample ID: 890-2686-A-1-C MS Client Sample ID: Matrix Spike

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 31239

Prep Batch: 31286

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<49.9	U	999	941.9		mg/Kg		94	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<49.9	U	999	802.5		mg/Kg		80	70 - 130	
C10 C28)										

C10-C28)

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

# QC Sample Results

Client: Ensolum Job ID: 890-2677-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

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

Lab Sample ID: 890-2686-A-1-D MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** Analysis Batch: 31239 Prep Type: Total/NA Prep Batch: 31286

Client Sample ID: Lab Control Sample Dup

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Sample Sample Spike MSD MSD RPD Result Qualifier RPD Limit Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <49.9 U 999 829.1 mg/Kg 83 70 - 130 13 20 (GRO)-C6-C10 999 700.8 Diesel Range Organics (Over <49.9 U mg/Kg 70 70 - 130 14

C10-C28)

MSD MSD

Surrogate	%Recovery G	Qualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	82		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31217/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31435** 

мв мв

Analyte	Result Q	ualifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	5.00	mg/Kg			08/04/22 14:26	1

Lab Sample ID: LCS 880-31217/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31435** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	238.5		mg/Kg		95	90 - 110	 

Lab Sample ID: LCSD 880-31217/3-A

**Matrix: Solid** 

**Analysis Batch: 31435** 

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	238.9		ma/Ka		96	90 _ 110		20

Lab Sample ID: 890-2675-A-11-F MS

**Matrix: Solid** 

**Analysis Batch: 31435** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	12 1		252	259.6		ma/Ka		98	90 110	

Lab Sample ID: 890-2675-A-11-G MSD

**Matrix: Solid** Analysis Batch: 31435

Allalysis Dalcil. 31433											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	12.1		252	265.0		mg/Kg		101	90 - 110	2	20

# **QC Association Summary**

Client: Ensolum Project/Site: Pierce Canyon 20-24-30 Job ID: 890-2677-1

SDG: 03e1558088

**GC VOA** 

Prep Batch: 31323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31323/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 31337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2677-1	SS02	Total/NA	Solid	5035	
MB 880-31337/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

**Analysis Batch: 31375** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2677-1	SS02	Total/NA	Solid	8021B	31337
MB 880-31323/5-A	Method Blank	Total/NA	Solid	8021B	31323
MB 880-31337/5-A	Method Blank	Total/NA	Solid	8021B	31337
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	8021B	31337
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31337
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	31337
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31337

Analysis Batch: 31484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2677-1	SS02	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

Analysis Batch: 31239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2677-1	SS02	Total/NA	Solid	8015B NM	31286
MB 880-31286/1-A	Method Blank	Total/NA	Solid	8015B NM	31286
LCS 880-31286/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31286
LCSD 880-31286/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31286
890-2686-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	31286
890-2686-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31286

Prep Batch: 31286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2677-1	SS02	Total/NA	Solid	8015NM Prep	
MB 880-31286/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31286/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31286/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2686-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2686-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

**Analysis Batch: 31400** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2677-1	SS02	Total/NA	Solid	8015 NM	

# **QC Association Summary**

 Client: Ensolum
 Job ID: 890-2677-1

 Project/Site: Pierce Canyon 20-24-30
 SDG: 03e1558088

HPLC/IC

Leach Batch: 31217

<b>Lab Sample ID</b> 890-2677-1	Client Sample ID SS02	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-31217/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31217/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31217/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2675-A-11-F MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2675-A-11-G MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2677-1	SS02	Soluble	Solid	300.0	31217
MB 880-31217/1-A	Method Blank	Soluble	Solid	300.0	31217
LCS 880-31217/2-A	Lab Control Sample	Soluble	Solid	300.0	31217
LCSD 880-31217/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31217
890-2675-A-11-F MS	Matrix Spike	Soluble	Solid	300.0	31217
890-2675-A-11-G MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31217

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### **Lab Chronicle**

Job ID: 890-2677-1 Client: Ensolum Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

**Client Sample ID: SS02** Lab Sample ID: 890-2677-1 Date Collected: 07/28/22 12:20

Matrix: Solid

Date Received: 07/28/22 13:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	31337	08/02/22 14:44	MR	EETSC MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31375	08/04/22 03:22	MR	EETSC MIC
Total/NA	Analysis	Total BTEX		1			31484	08/04/22 09:41	SM	EETSC MII
Total/NA	Analysis	8015 NM		1			31400	08/03/22 11:13	SM	EETSC MII
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	31286	08/02/22 08:40	DM	EETSC MIC
Total/NA	Analysis	8015B NM		1			31239	08/02/22 14:30	SM	EETSC MIC
Soluble	Leach	DI Leach			5.04 g	50 mL	31217	08/01/22 16:05	SMC	EETSC MIC
Soluble	Analysis	300.0		1			31435	08/04/22 19:26	CH	EETSC MID

#### **Laboratory References:**

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

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2677-1 Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

### **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	NE	ELAP	T104704400-22-24	06-30-23	
The following analytes the agency does not of	' '	ut the laboratory is not certif	led by the governing authority. This list ma	ay include analytes for	
Analysis Method	Prep Method	Matrix	Analyte		
8015 NM		Solid	Total TPH		

# **Method Summary**

Job ID: 890-2677-1 Client: Ensolum Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EETSC MID
Total BTEX	Total BTEX Calculation	TAL SOP	EETSC MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EETSC MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EETSC MID
300.0	Anions, Ion Chromatography	MCAWW	EETSC MID
5035	Closed System Purge and Trap	SW846	EETSC MID
3015NM Prep	Microextraction	SW846	EETSC MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EETSC 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:

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

**Eurofins Carlsbad** 

Released to Imaging: 12/6/2022 8:18:26 AM

# Sample Summary

Client: Ensolum

Project/Site: Pierce Canyon 20-24-30

Job ID: 890-2677-1

SDG: 03e1558088

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2677-1	SS02	Solid	07/28/22 12:20	07/28/22 13:50	0.2

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	Xenco	Environment lesting Xenco	sting	Midlan EL Pa Hobb	d, TX (432) so, TX (915) s, NM (575)	Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	Work Order No:	30
							www.xenco.com	com Page of
Project Manager:	allowed	Min	4, (C) 5564	Bill to: (if different)	t)	GARCETT CARREA		Work Order Comments
7	nsolan			Company Name:	20	Ener	Program: UST/PST	Brownfields ☐ RRC ☐ Superfund ☐
City, State ZIP:				City, State ZIP:				PST/UST TRRP Level IV
Phone:			Email:				Deliverables: EDD	ADaPT ☐ Other:
Project Name:	Price Carol	20-24-30		Turn Around		ANAL	ANALYSIS REQUEST	Preservative Codes
ber:	155		No.	Rush	Pres. Code			None: NO DI Water: H <sub>2</sub> O
Project Location:			Due Date:					Cool: Cool MeOH: Me
Sampler's Name:			TAT starts th	TAT starts the day received by the lab, if received by 4:30pm		8		H.SO.: H. NaOH: Na
SAMPLE RECEIPT	Temp Blank:	Yes Wo	Wet Ice:	Yes No	sters			
Samples Received Intact:	Yes No	Thermometer ID:	ter ID:	C-40 2/	1			NaHSO 4: NABIS
Cooler Custody Seals:	Yes No M/A	1	Factor:	0.0				Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO 3
Sample Custody Seals:	Yes No N/A	1	Temperature Reading:	10.6	_	890-24	890-2677 Chain of Custody	Zn Acetate+NaOH: Zn
Total Containers:		Corrected	Corrected Temperature:	10.4		1		NaOH+Ascorbic Acid: SAPC
Sample Identification	on Matrix	ix Date Sampled	Time	Depth Grab/	# of Cont	8/1/2		Sample Comments
5562	2	728	020	57	7			
							,	
Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	200.8 / 6020: Metal(s) to be ar	) nalyzed	8RCRA 13PPM TCLP / SPL	PM Texas 11 SPLP 6010 : 8R0	Al Sb A	A 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K TCLP/SPLP6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl n Mo Ni Se Ag Tl U Hg: 1631/245.1/7.	i Sr Tl Sn U V Zn i5.1/7470 /7471
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order for service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsite for Eurofins Xenco. A minimum charge of \$55.00 will be applied to each project and a charge of \$5 for	and relinquishment of sai ble only for the cost of sa ge of \$85.00 will be applic	mples constitutes amples and shall no led to each project	a valid purchase or st assume any resp and a charge of \$!	der from client compar onsibility for any losses i for each sample subr	y to Eurofins or expenses Itted to Euro	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 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 standard terms and conditions rcumstances beyond the control enforced unless previously negotiated.	
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Chain of Custody

8/5/2022

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2677-1 SDG Number: 03e1558088

List Source: Eurofins Carlsbad

Login Number: 2677 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 Number: 890-2677-1 SDG Number: 03e1558088

**List Source: Eurofins Midland** 

Creator: Rodriguez, Leticia

Login Number: 2677

List Number: 2

List Creation: 08/01/22 08:22 AM

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



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2679-1

Laboratory Sample Delivery Group: 03e1558088 Client Project/Site: Pierce Canyon 20-24-30

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

RAMER

Authorized for release by: 8/4/2022 4:02:38 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum
Project/Site: Pierce Canyon 20-24-30
Laboratory Job ID: 890-2679-1
SDG: 03e1558088

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# **Definitions/Glossary**

Client: Ensolum Job ID: 890-2679-1 SDG: 03e1558088 Project/Site: Pierce Canyon 20-24-30

#### **Qualifiers**

GC	<b>VOA</b>
Qua	lifier

*_	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.

Indicates the analyte was analyzed for but not detected.

**Qualifier Description** 

#### **GC Semi VOA**

Qualifier	Qualifier Description
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**

LOD

LOQ

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)

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

Limit of Quantitation (DoD/DOE)

Limit of Detection (DoD/DOE)

MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit Not Calculated

NC ND

Not Detected at the reporting limit (or MDL or EDL if shown) NEG Negative / Absent

POS Positive / Present **Practical Quantitation Limit PQL** 

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

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

#### **Case Narrative**

Client: Ensolum

Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

Job ID: 890-2679-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2679-1

#### Receipt

The sample was received on 7/28/2022 1:50 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 10.4°C

#### **GC VOA**

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-31337 and analytical batch 880-31375 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

#### GC Semi VOA

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 880-31219 and analytical batch 880-31436 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.

**Eurofins Carlsbad** 8/4/2022

# **Client Sample Results**

 Client: Ensolum
 Job ID: 890-2679-1

 Project/Site: Pierce Canyon 20-24-30
 SDG: 03e1558088

Client Sample ID: SS03 Lab Sample ID: 890-2679-1

Date Collected: 07/28/22 12:30

Date Received: 07/28/22 13:50

Matrix: Solid

Sample Depth: 0.2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U *- *1	0.00201	mg/Kg		08/02/22 14:44	08/04/22 03:42	1
Toluene	<0.00201	U *- *1	0.00201 mg/Kg			08/02/22 14:44	08/04/22 03:42	1
Ethylbenzene	<0.00201	U *- *1	0.00201	mg/Kg		08/02/22 14:44	08/04/22 03:42	1
m-Xylene & p-Xylene	<0.00402	U *- *1	0.00402	mg/Kg		08/02/22 14:44	08/04/22 03:42	1
o-Xylene	<0.00201	U *+ *1	0.00201	mg/Kg		08/02/22 14:44	08/04/22 03:42	1
Xylenes, Total	<0.00402	U *1	0.00402	mg/Kg		08/02/22 14:44	08/04/22 03:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		70 - 130			08/02/22 14:44	08/04/22 03:42	1
1,4-Difluorobenzene (Surr)	95		70 - 130			08/02/22 14:44	08/04/22 03:42	1
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/04/22 09:41	1
Method: 8015 NM - Diesel Range			0.00.102	9/1.19				
• •	Organics (DR		RL	Unit	D	Prepared	Analyzed	Dil Fac
: Method: 8015 NM - Diesel Range	Organics (DR	O) (GC) Qualifier			<u>D</u>	Prepared	Analyzed 08/03/22 11:13	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH	e Organics (DR) Result <50.0	O) (GC) Qualifier	RL	Unit	<u>D</u>	Prepared		Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH Method: 8015B NM - Diesel Rang	o Organics (DR Result <50.0	O) (GC) Qualifier U	RL 50.0	Unit mg/Kg			08/03/22 11:13	1
Method: 8015 NM - Diesel Range Analyte Total TPH Method: 8015B NM - Diesel Rang Analyte	e Organics (DR Result <50.0 ge Organics (DI Result	Qualifier U  RO) (GC) Qualifier	RL	Unit mg/Kg	<u>D</u>	Prepared	08/03/22 11:13  Analyzed	1 Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics	o Organics (DR Result <50.0	Qualifier U  RO) (GC) Qualifier	RL 50.0	Unit mg/Kg			08/03/22 11:13	1
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	e Organics (DR Result <50.0 ge Organics (DI Result	Qualifier U  RO) (GC) Qualifier U  U	RL	Unit mg/Kg		Prepared	08/03/22 11:13  Analyzed	1 Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	e Organics (DR Result <50.0 ge Organics (D Result <50.0	Qualifier U  RO) (GC) Qualifier U  U  U  U	RL 50.0	Unit mg/Kg  Unit mg/Kg		Prepared 08/02/22 14:24	08/03/22 11:13  Analyzed  08/03/22 01:29	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH Method: 8015B NM - Diesel Rang Analyte	e Organics (DR Result <50.0 ge Organics (Di Result <50.0	Qualifier U  RO) (GC) Qualifier U  U  U  U	RL 50.0 50.0 50.0	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 08/02/22 14:24 08/02/22 14:24	08/03/22 11:13  Analyzed  08/03/22 01:29  08/03/22 01:29	1 Dil Fac
Method: 8015 NM - Diesel Range 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)	e Organics (DR/Result <50.0  ge Organics (D/Result <50.0  <50.0  <50.0	Qualifier U  RO) (GC) Qualifier U  U  U  U	RL 50.0 50.0 50.0	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 08/02/22 14:24 08/02/22 14:24	08/03/22 11:13  Analyzed 08/03/22 01:29 08/03/22 01:29 08/03/22 01:29	1 Dil Fac 1 1
Method: 8015 NM - Diesel Range 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	e Organics (DR Result <50.0 ge Organics (DI Result <50.0 <50.0	Qualifier U  RO) (GC) Qualifier U  U  U  U	RL 50.0 RL 50.0 50.0 50.0	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 08/02/22 14:24 08/02/22 14:24 08/02/22 14:24 Prepared	08/03/22 11:13  Analyzed 08/03/22 01:29 08/03/22 01:29 08/03/22 01:29 Analyzed	Dil Fac  1  1  Dil Fac  Dil Fac
Method: 8015 NM - Diesel Range 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	e Organics (DR/Result < 50.0   Result < 50.0   Result < 50.0   \$<50.0   \$<50.0   \$<50.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<60.0   \$<6	O) (GC) Qualifier U  RO) (GC) Qualifier U  U  Qualifier	RL 50.0 RL 50.0 50.0 50.0 Limits 70 - 130	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 08/02/22 14:24 08/02/22 14:24 08/02/22 14:24  Prepared 08/02/22 14:24	08/03/22 11:13  Analyzed 08/03/22 01:29 08/03/22 01:29 08/03/22 01:29  Analyzed 08/03/22 01:29	Dil Fac  1  1  Dil Fac  Dil Fac
Method: 8015 NM - Diesel Range 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	ge Organics (DR) Result <50.0  Ge Organics (D) Result <50.0  <50.0  <50.0  %Recovery 77 86  pomatography -	O) (GC) Qualifier U  RO) (GC) Qualifier U  U  Qualifier	RL 50.0 RL 50.0 50.0 50.0 Limits 70 - 130	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 08/02/22 14:24 08/02/22 14:24 08/02/22 14:24  Prepared 08/02/22 14:24	08/03/22 11:13  Analyzed 08/03/22 01:29 08/03/22 01:29 08/03/22 01:29  Analyzed 08/03/22 01:29	Dil Fac  1  1  Dil Fac  Dil Fac

# **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-2679-1

 Project/Site: Pierce Canyon 20-24-30
 SDG: 03e1558088

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2656-A-1-F MS	Matrix Spike	104	96	
890-2656-A-1-G MSD	Matrix Spike Duplicate	106	93	
890-2679-1	SS03	119	95	
LCS 880-31337/1-A	Lab Control Sample	113	93	
LCSD 880-31337/2-A	Lab Control Sample Dup	90	87	
MB 880-31323/5-A	Method Blank	106	87	
MB 880-31337/5-A	Method Blank	99	87	

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2678-A-1-D MS	Matrix Spike	84	89	
890-2678-A-1-E MSD	Matrix Spike Duplicate	75	74	
890-2679-1	SS03	77	86	
LCS 880-31333/2-A	Lab Control Sample	84	87	
LCSD 880-31333/3-A	Lab Control Sample Dup	85	87	
MB 880-31333/1-A	Method Blank	100	119	
Surrogate Legend				

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31323/5-A

Lab Sample ID: MB 880-31337/5-A

**Matrix: Solid** 

Matrix: Solid

**Analysis Batch: 31375** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31323

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/02/22 13:15	08/03/22 10:46	1

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared
4-Bromofluorobenzene (Surr)	106		70 - 130	08/02/22 13:15
1.4-Difluorobenzene (Surr)	87		70 - 130	08/02/22 13:15

08/03/22 10:46 08/02/22 13:15 08/03/22 10:46

Analyzed

Prepared

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

Prep Batch: 31337

Dil Fac

Analysis Batch: 31375

мв мв

Analyte	Result (	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200		0.00200	mg/Kg	_ =	08/02/22 14:44	08/03/22 21:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/02/22 14:44	08/03/22 21:53	1

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	08/02/22 14:-	08/03/22 21:53	1
1,4-Difluorobenzene (Surr)	87		70 - 130	08/02/22 14:-	14 08/03/22 21:53	1

Lab Sample ID: LCS 880-31337/1-A

**Matrix: Solid** 

**Analysis Batch: 31375** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 31337

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09999		mg/Kg		100	70 - 130	
Toluene	0.100	0.1031		mg/Kg		103	70 - 130	
Ethylbenzene	0.100	0.1082		mg/Kg		108	70 - 130	
m-Xylene & p-Xylene	0.200	0.2220		mg/Kg		111	70 - 130	
o-Xylene	0.100	0.1387	*+	mg/Kg		139	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	113	70 - 130
1,4-Difluorobenzene (Surr)	93	70 - 130

Lab Sample ID: LCSD 880-31337/2-A

**Matrix: Solid** 

**Analysis Batch: 31375** 

Client Sample ID: Lab	<b>Control Sample Dup</b>
	Donner Towner Tokel/NIA

Prep Type: Total/NA

Prep Batch: 31337

	<b>Spike</b>	LCSD L	-C2D				%Rec		RPD
Analyte	Added	Result Q	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.0998	0.05262 *-	- *1	mg/Kg		53	70 - 130	62	35

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## QC Sample Results

Client: Ensolum Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

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

Lab Sample ID: LCSD 880-31337/2-A

**Matrix: Solid Analysis Batch: 31375**  Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 31337

Spike LCSD LCSD %Rec **RPD** Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit D Toluene 0.0998 0.06071 \*- \*1 61 70 - 130 35 mg/Kg 52 Ethylbenzene 0.0998 0.06794 \*- \*1 mg/Kg 68 70 - 130 46 35 0.200 0.1297 \*- \*1 m-Xylene & p-Xylene mg/Kg 65 70 - 130 35 52 0.0998 o-Xylene 0.09111 \*1 mg/Kg 91 70 - 130 41

LCSD LCSD

Surrogate	%Recovery Q	ualifier	Limits
4-Bromofluorobenzene (Surr)	90		70 - 130
1,4-Difluorobenzene (Surr)	87		70 - 130

Lab Sample ID: 890-2656-A-1-F MS

**Matrix: Solid** 

**Analysis Batch: 31375** 

Client Sa	mple II	D: Mat	rix Sp	oike
	D	<b>T</b>	T - 4 - 1	/h I A

Prep Type: Total/NA

Prep Batch: 31337

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Benzene U \*- \*1 0.101 0.08722 87 70 - 130 <0.00199 mg/Kg Toluene <0.00199 U \*- \*1 0.101 0.08202 82 70 - 130 mg/Kg Ethylbenzene 0.101 0.08158 70 - 130 < 0.00199 U \*- \*1 mg/Kg 81 m-Xylene & p-Xylene <0.00398 U \*- \*1 0.201 0.1625 81 70 - 130 mg/Kg o-Xylene <0.00199 U\*+\*1 0.101 0.09304 mg/Kg 92 70 - 130

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	96	70 - 130

Lab Sample ID: 890-2656-A-1-G MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 31375** 

Prep Type: Total/NA Prep Batch: 31337

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00199	U *- *1	0.0998	0.09326		mg/Kg		93	70 - 130	7	35
Toluene	<0.00199	U *- *1	0.0998	0.08591		mg/Kg		86	70 - 130	5	35
Ethylbenzene	<0.00199	U *- *1	0.0998	0.08696		mg/Kg		87	70 - 130	6	35
m-Xylene & p-Xylene	<0.00398	U *- *1	0.200	0.1684		mg/Kg		84	70 - 130	4	35
o-Xylene	<0.00199	U *+ *1	0.0998	0.09635		mg/Kg		97	70 - 130	3	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

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

Lab Sample ID: MB 880-31333/1-A

**Matrix: Solid** 

Analysis Batch: 31239

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

Prep Batch: 31333

MB MB Analyte Result Qualifier RL Unit Prepared <50.0 U 50.0 mg/Kg 08/02/22 14:24 08/02/22 19:51 Gasoline Range Organics

(GRO)-C6-C10

Client: Ensolum Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

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

%Recovery Qualifier

85

87

Lab Sample ID: MB 880-31333/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 31239** Prep Batch: 31333

	MB	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/02/22 14:24	08/02/22 19:51	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/02/22 14:24	08/02/22 19:51	1
	МВ	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			08/02/22 14:24	08/02/22 19:51	1
o-Terphenyl	119		70 - 130			08/02/22 14:24	08/02/22 19:51	1

Lab Sample ID: LCS 880-31	333/2-A						Client	Sample	ID: Lab Control Sam
Matrix: Solid									Prep Type: Total
Analysis Batch: 31239									Prep Batch: 31
			Spike	LCS	LCS				%Rec
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics			1000	906.0		mg/Kg		91	70 - 130
(GRO)-C6-C10									
Diesel Range Organics (Over			1000	817.8		mg/Kg		82	70 - 130
C10-C28)									
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	84		70 - 130						
o-Terphenyl	87		70 <sub>-</sub> 130						

Lab Sample ID: LCSD 880-31333/3-A Matrix: Solid Analysis Batch: 31239				Clie	nt Sam	iple ID: I		ol Sampl Type: To Batch:	tal/NA
7 <b>,</b> 6.0 2.10 6.200	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	970.7		mg/Kg		97	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	1000	883.1		mg/Kg		88	70 - 130	8	20
LCSD LCSD	)								

Limits

70 - 130

70 - 130

Lab Sample ID: 890-2678-A-Matrix: Solid Analysis Batch: 31239	1-D MS							Client	Prep Ty	Matrix Spike ype: Total/NA Batch: 31333
	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	976.7		mg/Kg		96	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.9	U	999	862.4		mg/Kg		86	70 - 130	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	84		70 - 130							
o-Terphenyl	89		70 - 130							

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Surrogate

o-Terphenyl

1-Chlorooctane

## QC Sample Results

Job ID: 890-2679-1 Client: Ensolum SDG: 03e1558088 Project/Site: Pierce Canyon 20-24-30

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

Lab Sample ID: 890-2678-A-1-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** Analysis Batch: 31239

Prep Type: Total/NA Prep Batch: 31333

	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	876.2		mg/Kg		85	70 - 130	11	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<49.9	U	999	725.5		mg/Kg		73	70 - 130	17	20
C10-C28)											

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	75		70 - 130
o-Terphenyl	74		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31219/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

Matrix: Solid

Analysis Batch: 31436

мв мв

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	5.00	mg/Kg			08/04/22 08:50	1

Lab Sample ID: LCS 880-31219/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 31436** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	266.3	-	mg/Kg		107	90 - 110	 

Lab Sample ID: LCSD 880-31219/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

Matrix: Solid

Analysis Batch: 31436

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	236.4		mg/Kg		95	90 - 110	12	20	

Lab Sample ID: 890-2678-A-7-B MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 31436

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	37.7	F1	249	267.9		ma/Ka		92	90 110	

Lab Sample ID: 890-2678-A-7-C MSD

Client Sample ID: Matrix Spike Duplicate **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 31436

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	37.7	F1	249	314.4	F1	mg/Kg		111	90 - 110	16	20

## QC Sample Results

Client: Ensolum Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2682-A-6-E MS Client Sample ID: Matrix Spike **Matrix: Solid** 

**Prep Type: Soluble** 

Analysis Batch: 31436

Sample Sample Spike MS MS %Rec Result Qualifier Result Qualifier Added Analyte Unit %Rec Limits Chloride 765 F1 252 1167 F1 mg/Kg 160 90 - 110

Client Sample ID: Matrix Spike Duplicate

**Prep Type: Soluble** 

Analysis Batch: 31436

**Matrix: Solid** 

Lab Sample ID: 890-2682-A-6-F MSD

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier RPD Added Result Qualifier Limits Limit Analyte Unit D %Rec Chloride 765 F1 252 980.9 F1 mg/Kg 86 90 - 110 17 20

## **QC Association Summary**

Client: Ensolum Project/Site: Pierce Canyon 20-24-30

Job ID: 890-2679-1

SDG: 03e1558088

## **GC VOA**

## Prep Batch: 31323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31323/5-A	Method Blank	Total/NA	Solid	5035	

### Prep Batch: 31337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2679-1	SS03	Total/NA	Solid	5035	
MB 880-31337/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### **Analysis Batch: 31375**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2679-1	SS03	Total/NA	Solid	8021B	31337
MB 880-31323/5-A	Method Blank	Total/NA	Solid	8021B	31323
MB 880-31337/5-A	Method Blank	Total/NA	Solid	8021B	31337
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	8021B	31337
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31337
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	31337
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31337

### Analysis Batch: 31485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2679-1	SS03	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

### Analysis Batch: 31239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2679-1	SS03	Total/NA	Solid	8015B NM	31333
MB 880-31333/1-A	Method Blank	Total/NA	Solid	8015B NM	31333
LCS 880-31333/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31333
LCSD 880-31333/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31333
890-2678-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	31333
890-2678-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31333

### Prep Batch: 31333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2679-1	SS03	Total/NA	Solid	8015NM Prep	
MB 880-31333/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31333/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31333/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2678-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2678-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 31407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2679-1	SS03	Total/NA	Solid	8015 NM	

## **QC Association Summary**

Client: Ensolum Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

HPLC/IC

Leach Batch: 31219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2679-1	SS03	Soluble	Solid	DI Leach	
MB 880-31219/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31219/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31219/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2678-A-7-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2678-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2682-A-6-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2682-A-6-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2679-1	SS03	Soluble	Solid	300.0	31219
MB 880-31219/1-A	Method Blank	Soluble	Solid	300.0	31219
LCS 880-31219/2-A	Lab Control Sample	Soluble	Solid	300.0	31219
LCSD 880-31219/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31219
890-2678-A-7-B MS	Matrix Spike	Soluble	Solid	300.0	31219
890-2678-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31219
890-2682-A-6-E MS	Matrix Spike	Soluble	Solid	300.0	31219
890-2682-A-6-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31219

## **Lab Chronicle**

Client: Ensolum Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

**Client Sample ID: SS03** Lab Sample ID: 890-2679-1 Date Collected: 07/28/22 12:30

Matrix: Solid

Date Received: 07/28/22 13:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	31337	08/02/22 14:44	MR	EETSC MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31375	08/04/22 03:42	MR	EETSC MIC
Total/NA	Analysis	Total BTEX		1			31485	08/04/22 09:41	SM	EETSC MII
Total/NA	Analysis	8015 NM		1			31407	08/03/22 11:13	SM	EETSC MII
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31333	08/02/22 14:24	DM	EETSC MIC
Total/NA	Analysis	8015B NM		1			31239	08/03/22 01:29	SM	EETSC MIC
Soluble	Leach	DI Leach			4.98 g	50 mL	31219	08/01/22 16:08	SMC	EETSC MIC
Soluble	Analysis	300.0		1			31436	08/04/22 12:35	CH	EETSC MID

#### **Laboratory References:**

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

## **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

### **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	NI	ELAP	T104704400-22-24	06-30-23	
The following analytes the agency does not of	. ,	ut the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes fo	
Analysis Method	Prep Method	Matrix	Analyte		
8015 NM		Solid	Total TPH		

## **Method Summary**

Client: Ensolum Job ID: 890-2679-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

tocol	Laboratory
846	EETSC MID
.SOP	EETSC MID

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

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

## **Sample Summary**

Client: Ensolum

Project/Site: Pierce Canyon 20-24-30

Job ID: 890-2679-1

SDG: 03e1558088

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2679-1	SS03	Solid	07/28/22 12:30	07/28/22 13:50	0.2

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Page	R Comments  Brownfields RRC Superfund   Brownfields RRC Superfund   Brownig State S	Other:  Preservative Co	. Þ 🖻 🛨 🗟   🙃	TI Sn U V Zn /7470 /7471	Date/Time
Work Order No:	Work Order Comments  Program: UST/PST □ PRP □ Brownfields □ State of Project:	G Pap		Ji K Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1 lated.	Received by: (Signature)
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	aut Graen	ANALYSIS REQUEST	890-2679 Chain of Custody	AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni CRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U y to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions or expenses incurred by the client if such losses are due to circumstances beyond the control itted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotata	Date/Time Relinquished by: (Signature)
Chair  Houston, TX (281) 2  Midland, TX (432) 704- EL Paso, TX (915) 585  Hobbs, NM (575) 393	Bill to: (if different) Company Name:	City, State ZIP:	received by 430pm Vel Comp	A 13PPM Texas 11 AI Sb As Ba Be ETCLP / SPLP 6010: 8RCRA Sb As Ba Be excrete order from client company to Eurofins Xenco, its affiliate any responsibility for any losses or expenses incurred by the harge of 55 for each sample submitted to Eurofins Xenco, but the harge of 55 for each sample submitted to Eurofins Xenco, but the harge of 55 for each sample submitted to Eurofins Xenco, but the harge of 55 for each sample submitted to Eurofins Xenco, but the harge of 55 for each sample submitted to Eurofins Xenco, but the harge of 55 for each sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the harden and the sample submitted to Eurofins Xenco, but the sample submitted to Eurofins Xen	70.
Fins Environment Testing Xenco	Talona Monissey Ensolun	Prece Canor 20-24-30 Aum	Temp Blank: Yes (No Cycection Fay Yes No (N/A) Temperature Corrected Temperature Sampled Sampl	200.8 / 6020: 8RCR and Metal(s) to be analyzed ent and relinquishment of samples constitutes a valid peel labbe only for the cost of samples and shall not assunchage of \$85.00 will be applied to each project and a	(Signature) Received by: (Signature)
💸 eurofins	Project Manager: Company Name: Address:	City, State ZIP: Phone: Project Name: Project Number:	Project Location: Sampler's Name: PO #: SAMPLE RECEIPT Samples Received Intact: Cooler Custody Seals: Sample Custody Seals: Total Containers: Sample Identification	Total 200.7 / 6010  Circle Method(s) are strictly and strictly service: Signature of this docum strictly service. Eurofins Xenco. A minimum of Eurofins Xenco. A minimum	Relinquished by: (Signature)

## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2679-1 SDG Number: 03e1558088

Login Number: 2679 List Source: Eurofins Carlsbad

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: 890-2679-1 SDG Number: 03e1558088

List Source: Eurofins Midland

List Number: 2 Creator: Rodriguez, Leticia

Login Number: 2679

List Creation: 08/01/22 08:22 AM

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

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# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2680-1

Laboratory Sample Delivery Group: 03e1558088 Client Project/Site: Pierce Canyon 20-24-30

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

RAMER

Authorized for release by: 8/8/2022 3:53:13 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

Client: Ensolum
Project/Site: Pierce Canyon 20-24-30
Laboratory Job ID: 890-2680-1
SDG: 03e1558088

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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-2680-1 Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

### **Qualifiers**

### **GC VOA**

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

#### **GC Semi VOA**

Qualif	ier	Qualifier Description
U		Indicates the analyte was analyzed for but not detected.

Decision Level Concentration (Radiochemistry)

EPA recommended "Maximum Contaminant Level"

Minimum Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry)

Estimated Detection Limit (Dioxin)

Limit of Detection (DoD/DOE)

Limit of Quantitation (DoD/DOE)

### **HPLC/IC**

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

DLC

EDL

LOD

LOQ

MCL

MDA

MDC MDL

ML

MPN MQL

NC

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	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

ND Not Detected at the reporting limit (or MDL or EDL if shown) NEG Negative / Absent

Method Quantitation Limit

Method Detection Limit Minimum Level (Dioxin)

Most Probable Number

Not Calculated

POS Positive / Present PQL Practical Quantitation Limit

Presumptive **PRES** 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) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

**TNTC** Too Numerous To Count

### **Case Narrative**

Client: Ensolum

Project/Site: Pierce Canyon 20-24-30

Job ID: 890-2680-1

SDG: 03e1558088

Job ID: 890-2680-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2680-1

#### Receipt

The sample was received on 7/28/2022 1:50 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 10.4°C

#### **GC VOA**

Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-31335 and analytical batch 880-31540 recovered outside control limits for the following analytes: Ethylbenzene, m-Xylene & p-Xylene, o-Xylene and Xylenes, Total.

Method 8021B: Spike compounds were inadvertently omitted during the extraction process for the matrix spike duplicate (MSD); therefore, matrix spike duplicate recoveries are unavailable for preparation batch 880-31335 and analytical batch 880-31540. The associated laboratory control sample (LCS) met acceptance criteria.

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

#### GC Semi VOA

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 880-31219 and analytical batch 880-31436 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

## **Client Sample Results**

Client: Ensolum Job ID: 890-2680-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

Client Sample ID: SS04 Lab Sample ID: 890-2680-1 Date Collected: 07/28/22 12:40

Matrix: Solid

Sample Depth: 0.2

Date Received: 07/28/22 13:50

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 18:33	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 18:33	1
Ethylbenzene	<0.00200	U *1	0.00200	mg/Kg		08/02/22 14:31	08/05/22 18:33	1
m-Xylene & p-Xylene	<0.00401	U *1	0.00401	mg/Kg		08/02/22 14:31	08/05/22 18:33	1
o-Xylene	<0.00200	U *1	0.00200	mg/Kg		08/02/22 14:31	08/05/22 18:33	1
Xylenes, Total	<0.00401	U *1	0.00401	mg/Kg		08/02/22 14:31	08/05/22 18:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130			08/02/22 14:31	08/05/22 18:33	1
1,4-Difluorobenzene (Surr)	92		70 - 130			08/02/22 14:31	08/05/22 18:33	1
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			08/08/22 14:27	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			08/03/22 11:13	1
Method: 8015B NM - Diesel Rang	ge 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		08/02/22 14:24	08/03/22 01:51	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/02/22 14:24	08/03/22 01:51	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/02/22 14:24	08/03/22 01:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		70 - 130			08/02/22 14:24	08/03/22 01:51	1
o-Terphenyl	103		70 - 130			08/02/22 14:24	08/03/22 01:51	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	159		4.99	mg/Kg			08/04/22 12:43	1

## **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-2680-1

 Project/Site: Pierce Canyon 20-24-30
 SDG: 03e1558088

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		DED4	DED 74	Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2645-A-1-G MS	Matrix Spike	107	99	
890-2645-A-1-H MSD	Matrix Spike Duplicate	102	86	
890-2680-1	SS04	116	92	
890-2689-A-2-G MS	Matrix Spike	124	98	
890-2689-A-2-H MSD	Matrix Spike Duplicate	112	93	
LCS 880-31335/1-A	Lab Control Sample	116	100	
LCS 880-31573/1-A	Lab Control Sample	106	90	
LCSD 880-31335/2-A	Lab Control Sample Dup	106	98	
LCSD 880-31573/2-A	Lab Control Sample Dup	112	94	
MB 880-31335/5-A	Method Blank	99	89	
MB 880-31573/5-A	Method Blank	101	91	
Surrogate Legend				

DFBZ = 1,4-Difluorobenzene (Surr)

OTPH = o-Terphenyl

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

Matrix: Solid Prep Type: Total/NA

Client Sample ID	1001	OTPH1	
Client Sample ID			
	(70-130)	(70-130)	
Matrix Spike	84	89	
Matrix Spike Duplicate	75	74	
SS04	93	103	
Lab Control Sample	84	87	
Lab Control Sample Dup	85	87	
Method Blank	100	119	
	Matrix Spike Duplicate SS04 Lab Control Sample Lab Control Sample Dup	Matrix Spike Duplicate 75 SS04 93 Lab Control Sample 84 Lab Control Sample Dup 85	Matrix Spike Duplicate         75         74           SS04         93         103           Lab Control Sample         84         87           Lab Control Sample Dup         85         87

Client: Ensolum Job ID: 890-2680-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31335/5-A

Analysis Batch: 31540

**Matrix: Solid** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31335

	мв	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/02/22 14:31	08/05/22 11:25	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/02/22 14:31	08/05/22 11:25	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepare	d Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	08/02/22 14	4:31 08/05/22 11:25	<u> </u>
1.4-Difluorobenzene (Surr)	89		70 - 130	08/02/22 14	4:31 08/05/22 11:25	5 1

Lab Sample ID: LCS 880-31335/1-A

**Matrix: Solid** 

Analysis Batch: 31540

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 31335

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1114 mg/Kg 111 70 - 130 Toluene 0.100 0.1046 mg/Kg 105 70 - 130 0.100 Ethylbenzene 0.1239 mg/Kg 124 70 - 130 70 - 130 0.200 120 m-Xylene & p-Xylene 0.2398 mg/Kg 0.100 o-Xylene 0.1296 mg/Kg 130 70 - 130

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 880-31335/2-A

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31335

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08982		mg/Kg		90	70 - 130	21	35
Toluene	0.100	0.08489		mg/Kg		85	70 - 130	21	35
Ethylbenzene	0.100	0.08074	*1	mg/Kg		81	70 - 130	42	35
m-Xylene & p-Xylene	0.200	0.1641	*1	mg/Kg		82	70 - 130	38	35
o-Xylene	0.100	0.09044	*1	mg/Kg		90	70 - 130	36	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1.4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 890-2645-A-1-G MS

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31335

Sample Sample Spike MS MS Result Qualifier Added Result Qualifier Unit %Rec Limits

Analyte <0.00202 U F1 0.101 Benzene 0.1014 mg/Kg 101 70 - 130 Toluene <0.00202 UF1 0.101 0.09230 mg/Kg 91 70 - 130

Client: Ensolum

Job ID: 890-2680-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

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

Lab Sample ID: 890-2645-A-1-G MS

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Matrix Spike

**Prep Type: Total/NA** 

Prep Batch: 31335

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Ethylbenzene	<0.00202	U *1 F1	0.101	0.08894		mg/Kg		88	70 - 130
m-Xylene & p-Xylene	<0.00403	U *1 F1	0.201	0.1784		mg/Kg		87	70 - 130
o-Xylene	0.00264	*1 F1	0.101	0.09574		mg/Kg		93	70 - 130
o-Xylene	0.00264	*1 F1	0.101	0.09574		mg/Kg		93	70 - 13

MS MS

Surrogate	%Recovery Q	ualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Prep Batch: 31335

Lab Sample ID: 890-2645-A-1-H MSD **Matrix: Solid** 

Analysis Batch: 31540

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00202	U F1	0.0998	<0.00200	U F1	mg/Kg		0	70 - 130	NC	35
Toluene	<0.00202	U F1	0.0998	<0.00200	U F1	mg/Kg		0	70 - 130	NC	35
Ethylbenzene	<0.00202	U *1 F1	0.0998	<0.00200	U F1	mg/Kg		0	70 - 130	NC	35
m-Xylene & p-Xylene	<0.00403	U *1 F1	0.200	<0.00399	U F1	mg/Kg		0	70 - 130	NC	35
o-Xylene	0.00264	*1 F1	0.0998	<0.00200	U F1	mg/Kg		0	70 - 130	NC	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	86		70 - 130

Lab Sample ID: MB 880-31573/5-A

**Matrix: Solid** 

**Analysis Batch: 31540** 

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

Prep Batch: 31573

			МВ	МВ

	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
	Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
	Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
	m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
	o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
	Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/05/22 11:19	08/06/22 00:00	1
ı									

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	08/05/22 11:19	08/06/22 00:00	1
1,4-Difluorobenzene (Surr)	91		70 - 130	08/05/22 11:19	08/06/22 00:00	1

Lab Sample ID: LCS 880-31573/1-A

Matrix: Solid

Analysis Batch: 31540

CI	ient	Sampl	e ID:	Lab (	Control	Sample	
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Prep Type: Total/NA

Prep Batch: 31573

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09897		mg/Kg		99	70 - 130	
Toluene	0.100	0.1022		mg/Kg		102	70 - 130	
Ethylbenzene	0.100	0.1050		mg/Kg		105	70 - 130	
m-Xylene & p-Xylene	0.200	0.2137		mg/Kg		107	70 - 130	

Project/Site: Pierce Canyon 20-24-30

Client: Ensolum

Job ID: 890-2680-1

SDG: 03e1558088

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

Lab Sample ID: LCS 880-31573/1-A **Matrix: Solid** 

Analysis Batch: 31540

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 31573

LCS LCS Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits o-Xylene 0.100 0.1208 121 70 - 130 mg/Kg

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 106 70 - 130 70 - 130 1,4-Difluorobenzene (Surr) 90

Lab Sample ID: LCSD 880-31573/2-A

**Matrix: Solid** 

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

Prep Batch: 31573

**Analysis Batch: 31540** 

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09262		mg/Kg		93	70 - 130	7	35
Toluene	0.100	0.09534		mg/Kg		95	70 - 130	7	35
Ethylbenzene	0.100	0.1047		mg/Kg		105	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2146		mg/Kg		107	70 - 130	0	35
o-Xylene	0.100	0.1189		mg/Kg		119	70 - 130	2	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31573

**Matrix: Solid** Analysis Batch: 31540

Lab Sample ID: 890-2689-A-2-G MS

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U	0.101	0.09178		mg/Kg		91	70 - 130	
Toluene	<0.00200	U	0.101	0.1004		mg/Kg		100	70 - 130	
Ethylbenzene	<0.00200	U	0.101	0.1071		mg/Kg		107	70 - 130	
m-Xylene & p-Xylene	<0.00399	U	0.201	0.2218		mg/Kg		110	70 - 130	
o-Xylene	<0.00200	U	0.101	0.1258		mg/Kg		125	70 - 130	

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	124		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31573

**Analysis Batch: 31540** 

Matrix: Solid

Lab Sample ID: 890-2689-A-2-H MSD

-1												
		Sample	Sample	Spike	MSD	MSD				%Rec		RPD
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
	Benzene	<0.00200	U	0.0998	0.08524	-	mg/Kg		85	70 - 130	7	35
	Toluene	<0.00200	U	0.0998	0.08780		mg/Kg		88	70 - 130	13	35
	Ethylbenzene	<0.00200	U	0.0998	0.08996		mg/Kg		90	70 - 130	17	35
	m-Xylene & p-Xylene	<0.00399	U	0.200	0.1787		mg/Kg		90	70 - 130	22	35
	o-Xylene	<0.00200	U	0.0998	0.1036		mg/Kg		104	70 - 130	19	35

Job ID: 890-2680-1 Client: Ensolum Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

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

Lab Sample ID: 890-2689-A-2-H MSD

**Matrix: Solid** 

Analysis Batch: 31540

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31573

MSD MSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 112 70 - 130 1,4-Difluorobenzene (Surr) 93 70 - 130

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

Lab Sample ID: MB 880-31333/1-A

**Analysis Batch: 31239** 

**Matrix: Solid** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31333

MB MB

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 08/02/22 14:24 08/02/22 19:51 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 08/02/22 14:24 08/02/22 19:51 C10-C28) 08/02/22 14:24 08/02/22 19:51 Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	08/02/22 14:24	08/02/22 19:51	1
o-Terphenyl	119		70 - 130	08/02/22 14:24	08/02/22 19:51	1

Lab Sample ID: LCS 880-31333/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** 

**Analysis Batch: 31239** 

Prep Type: Total/NA

Prep Batch: 31333

LCS LCS Spike %Rec Result Qualifier Analyte Added Unit D %Rec Limits Gasoline Range Organics 1000 906.0 mg/Kg 91 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 1000 817.8 mg/Kg 82 70 - 130 C10-C28)

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	84	70 - 130
o-Terphenyl	87	70 - 130

Lab Sample ID: LCSD 880-31333/3-A

**Matrix: Solid** 

**Analysis Batch: 31239** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31333

LCSD LCSD Spike %Rec RPD Analyte Added Result Qualifier Unit %Rec Limits Limit Gasoline Range Organics 1000 970.7 97 70 - 130 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 883.1 88 70 - 130 20 mg/Kg

C10-C28)

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	85	70 - 130
o-Terphenyl	87	70 - 130

Job ID: 890-2680-1

Client: Ensolum Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

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

Lab Sample ID: 890-2678-A-1-D MS

**Matrix: Solid Analysis Batch: 31239**  Client Sample ID: Matrix Spike Prep Type: Total/NA Prep Batch: 31333

Sample Sample Spike MS MS Result Qualifier Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <49.9 U 999 976.7 mg/Kg 96 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 999 862 4 86 70 - 130 <49.9 U mg/Kg

C10-C28)

MS MS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 70 - 130 84 o-Terphenyl 89 70 - 130

Lab Sample ID: 890-2678-A-1-E MSD Client Sample ID: Matrix Spike Duplicate

**Analysis Batch: 31239** 

Matrix: Solid Prep Type: Total/NA

Prep Batch: 31333 RPD

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Client Sample ID: Lab Control Sample** 

90 - 110

Client Sample ID: Lab Control Sample Dup

107

mg/Kg

Spike MSD MSD %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits **RPD** Limit 999 Gasoline Range Organics <49.9 876.2 mg/Kg 85 70 - 130 11 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 999 725.5 mg/Kg 73 70 - 130 17 20 C10-C28)

MSD MSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 75 70 - 130 74 70 - 130 o-Terphenyl

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31219/1-A Client Sample ID: Method Blank

**Matrix: Solid** 

**Analysis Batch: 31436** 

MB MB

Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 08/04/22 08:50 mg/Kg

Lab Sample ID: LCS 880-31219/2-A

**Matrix: Solid** 

Analysis Batch: 31436 LCS LCS Spike %Rec Analyte Added Result Qualifier Unit D %Rec Limits

250

Lab Sample ID: LCSD 880-31219/3-A

Matrix: Solid

Chloride

Analysis Batch: 31436									
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	236.4		mg/Kg		95	90 - 110	12	20

266.3

## QC Sample Results

Client: Ensolum Job ID: 890-2680-1 Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

**Prep Type: Soluble** 

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2678-A-7-B MS

**Matrix: Solid** 

Analysis Batch: 31436

Sample Sample Spike MS MS %Rec Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Chloride 37.7 F1 249 267.9 mg/Kg 92 90 - 110

Lab Sample ID: 890-2678-A-7-C MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 31436

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	37.7	F1	249	314.4	F1	mg/Kg		111	90 - 110	16	20

Lab Sample ID: 890-2682-A-6-E MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 31436

MS MS %Rec Spike Sample Sample Analyte Result Qualifier Added Result Qualifier Unit Limits Chloride 765 F1 252 1167 F1 160 90 - 110 mg/Kg

Lab Sample ID: 890-2682-A-6-F MSD

**Matrix: Solid** 

Analysis Batch: 31436

Alialysis batch: 31436											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	765	F1	252	980.9	F1	mg/Kg		86	90 - 110	17	20

## **QC Association Summary**

Client: Ensolum
Project/Site: Pierce Canyon 20-24-30
Job ID: 890-2680-1
SDG: 03e1558088

**GC VOA** 

Prep Batch: 31335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2680-1	SS04	Total/NA	Solid	5035	
MB 880-31335/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31335/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31335/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2645-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2645-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 31540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2680-1	SS04	Total/NA	Solid	8021B	31335
MB 880-31335/5-A	Method Blank	Total/NA	Solid	8021B	31335
MB 880-31573/5-A	Method Blank	Total/NA	Solid	8021B	31573
LCS 880-31335/1-A	Lab Control Sample	Total/NA	Solid	8021B	31335
LCS 880-31573/1-A	Lab Control Sample	Total/NA	Solid	8021B	31573
LCSD 880-31335/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31335
LCSD 880-31573/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31573
890-2645-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	31335
890-2645-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31335
890-2689-A-2-G MS	Matrix Spike	Total/NA	Solid	8021B	31573
890-2689-A-2-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31573

## Prep Batch: 31573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31573/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31573/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31573/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2689-A-2-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2689-A-2-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 31773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2680-1	SS04	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

### **Analysis Batch: 31239**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2680-1	SS04	Total/NA	Solid	8015B NM	31333
MB 880-31333/1-A	Method Blank	Total/NA	Solid	8015B NM	31333
LCS 880-31333/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31333
LCSD 880-31333/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31333
890-2678-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	31333
890-2678-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31333

## Prep Batch: 31333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2680-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-31333/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31333/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31333/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2678-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	

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## **QC Association Summary**

 Client: Ensolum
 Job ID: 890-2680-1

 Project/Site: Pierce Canyon 20-24-30
 SDG: 03e1558088

## GC Semi VOA (Continued)

## Prep Batch: 31333 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2678-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 31408

L	ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
8	90-2680-1	SS04	Total/NA	Solid	8015 NM	

### HPLC/IC

### Leach Batch: 31219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2680-1	SS04	Soluble	Solid	DI Leach	
MB 880-31219/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31219/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31219/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2678-A-7-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2678-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2682-A-6-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2682-A-6-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 31436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2680-1	SS04	Soluble	Solid	300.0	31219
MB 880-31219/1-A	Method Blank	Soluble	Solid	300.0	31219
LCS 880-31219/2-A	Lab Control Sample	Soluble	Solid	300.0	31219
LCSD 880-31219/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31219
890-2678-A-7-B MS	Matrix Spike	Soluble	Solid	300.0	31219
890-2678-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31219
890-2682-A-6-E MS	Matrix Spike	Soluble	Solid	300.0	31219
890-2682-A-6-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31219

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## **Lab Chronicle**

Client: Ensolum Job ID: 890-2680-1 Project/Site: Pierce Canyon 20-24-30 SDG: 03e1558088

Client Sample ID: SS04 Lab Sample ID: 890-2680-1 Date Collected: 07/28/22 12:40

Matrix: Solid

Date Received: 07/28/22 13:50

	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	31335	08/02/22 14:31	MR	EETSC MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31540	08/05/22 18:33	MR	EETSC MIC
Total/NA	Analysis	Total BTEX		1			31773	08/08/22 14:27	SM	EETSC MIL
Total/NA	Analysis	8015 NM		1			31408	08/03/22 11:13	SM	EETSC MIL
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	31333	08/02/22 14:24	DM	EETSC MIE
Total/NA	Analysis	8015B NM		1			31239	08/03/22 01:51	SM	EETSC MII
Soluble	Leach	DI Leach			5.01 g	50 mL	31219	08/01/22 16:08	SMC	EETSC MIL
Soluble	Analysis	300.0		1			31436	08/04/22 12:43	CH	EETSC MIE

### **Laboratory References:**

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

## **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2680-1 Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

## **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	NE	ELAP	T104704400-22-24	06-30-23
The following analytes the agency does not of	•	ut the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes fo
Analysis Method	Prep Method	Matrix	Analyte	
Analysis Method	i iep wetilou	Mann	/ tridiyto	
8015 NM	Tep Method	Solid	Total TPH	

## **Method Summary**

Job ID: 890-2680-1 Client: Ensolum Project/Site: Pierce Canyon 20-24-30

SDG: 03e1558088

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

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

## Sample Summary

Client: Ensolum

Project/Site: Pierce Canyon 20-24-30

Job ID: 890-2680-1

SDG: 03e1558088

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2680-1	SS04	Solid	07/28/22 12:40	07/28/22 13:50	0.2

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Work Order No:

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

Environment Testing Xenco

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Chain of Custody

						www.xenco.com	m Page of I
Project Manager:	alowa No	Marisser	Bill to: (if different)	(malley 2	Green	Work Order Comments	Comments
3			Company Name:	XTO	Salve 7 Pro	Program: UST/PST	rownfields RRC Superfund
Address			Address:			State of Project:	
City State ZIP:			City, State ZIP:		Rep	Reporting: Level II 🔲 Level III 🗌	PST/UST TRRP Level IV
Phone:		Email:	_		Del	Deliverables: EDD AD	ADaPT ☐ Other:
Designet Married	10 Can. 60 702	A 62 4 5.00	Arm Around		ANALYSIS REQUEST		Preservative Codes
Project Number:	8808721	Rout	Rush	Pres.			None: NO DI Water: H <sub>2</sub> O
Project Location:		Due Date:					Cool: Cool MeOH: Me
Sampler's Name:		TAT starts th	TAT starts the day received by				
PO#.		the lab, if re	the lab, if received by 4:30pm	S			H2SO4: H2 NaOH: Na
SAMPLE RECEIPT	Temp Blank: Yes No	Ne Wet Ice:	Kes No	eter			H3PO4: HP
Samples Received Intact:	Yes No Therm	Thermometer ID:	IVM BOP	men			NaHSO 4: NABIS
Cooler Custody Seals:	(N/A)	Correction Factor:	6.0	₽g	Maria Maria Maria Maria		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : Na <sub>5</sub> O <sub>3</sub>
Sample Custody Seals:	Yes No MLM Temp	Temperature Reading:	-0.6	1	COOLEGE CHAIR OF CUSTORY	custody	Zn Acetate+NaOH: Zn
Total Containers:	Corre	Corrected Temperature:	10.4	HZ HI	_	-	NaOH+Ascorbic Acid: SAPC
Sample Identification	Matrix Date	te Time	Depth Comp	# of # O			Sample Comments
56.00.3	5 7		2/6	1			
1000		1					
Total 200.7 / 6010	200.8 / 6020:	8RCRA 13P	PM Texas 11 A	Sb As Ba Be B Cd C	8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni	K Se Ag SiO <sub>2</sub> Na	Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	stal(s) to be analyzed	TCLP /	TCLP / SPLP 6010 : 8RCRA		Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	TI U Hg: 1631 / 245.1 / 7470	.1/7470 /7471
Notice: Signature of this document and of service. Eurofins Xenco will be liable of Eurofins Xenco. A minimum charge o	relinquishment of samples const only for the cost of samples and s of \$85.00 will be applied to each p	tutes a valid purchase or thail not assume any resp project and a charge of \$	der from client company onsibility for any losses or 5 for each sample submitt	o Eurofins Xenco, its affiliates and su expenses incurred by the client if su ed to Eurofins Xenco, but not analyze	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any bosses 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.	onditions e control usly negotiated.	
Relinquished by: (Signature)	ture) Rece	Received by: (Signature	(e)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	ire) Date/Time
120	1	(,) 01		1-3K-3313E	2		
3	}	7					
		>		9			

## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2680-1 SDG Number: 03e1558088

Login Number: 2680 List Source: Eurofins Carlsbad

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 Number: 890-2680-1 SDG Number: 03e1558088

Login Number: 2680

List Source: Eurofins Midland
List Number: 2

List Creation: 08/01/22 08:22 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").

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Released to Imaging: 12/6/2022 8:18:26 AM

# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2730-1

Laboratory Sample Delivery Group: 03E1558088

Client Project/Site: PLU 20-24-30

Revision: 1

For:

**Ensolum** 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

RAMPR

Authorized for release by: 8/17/2022 12:28:30 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

 Client: Ensolum
 Laboratory Job ID: 890-2730-1

 Project/Site: PLU 20-24-30
 SDG: 03E1558088

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# **Definitions/Glossary**

Client: Ensolum Job ID: 890-2730-1 Project/Site: PLU 20-24-30

SDG: 03E1558088

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

U Indicates the analyte was analyzed for but not detected.

**Glossary** 

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery CFL Contains Free Liquid CFU Colony Forming Unit CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

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

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

MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number 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 QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

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

**TFF** Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

#### Case Narrative

Client: Ensolum

Project/Site: PLU 20-24-30

Job ID: 890-2730-1

SDG: 03E1558088

Job ID: 890-2730-1

**Laboratory: Eurofins Carlsbad** 

**Narrative** 

Job Narrative 890-2730-1

#### REVISION

The report being provided is a revision of the original report sent on 8/15/2022. The report (revision 1) is being revised due to Per client email, requested sample ID changes.

Report revision history

#### Receipt

The samples were received on 8/5/2022 11:06 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

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

#### GC Semi VOA

Method 8015MOD NM: The method blank for preparation batch 880-31783 and analytical batch 880-31823 contained Gasoline Range Organics (GRO)-C6-C10 and OII Range Organics (Over C28-C36) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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.

Date Received: 08/05/22 11:06

Client: Ensolum Job ID: 890-2730-1

Project/Site: PLU 20-24-30 SDG: 03E1558088

**Client Sample ID: BH01** Lab Sample ID: 890-2730-1 Date Collected: 08/04/22 10:30

Matrix: Solid

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 14:20	08/11/22 04:16	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 14:20	08/11/22 04:16	1
Ethylbenzene	< 0.00200	U	0.00200	mg/Kg		08/09/22 14:20	08/11/22 04:16	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		08/09/22 14:20	08/11/22 04:16	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 14:20	08/11/22 04:16	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/09/22 14:20	08/11/22 04:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130			08/09/22 14:20	08/11/22 04:16	1
1,4-Difluorobenzene (Surr)	90		70 - 130			08/09/22 14:20	08/11/22 04:16	1
Method: Total BTEX - Total B	TEX Calcula	tion						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
							00/44/00 40:57	1
	<0.00399		0.00399	mg/Kg			08/11/22 10:57	ı
Total BTEX  Method: 8015 NM - Diesel Rar	nge Organic	s (DRO) (0	GC)		ь	Propared		
	nge Organic	s (DRO) (C		mg/Kg  Unitmg/Kg	<u>D</u>	Prepared	Analyzed 08/10/22 09:17	Dil Fac
Method: 8015 NM - Diesel Rar Analyte Total TPH	nge Organic Result <49.9	s (DRO) (O Qualifier U	RL 49.9	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Rar Analyte Total TPH Method: 8015B NM - Diesel Ra	nge Organic Result <49.9	s (DRO) (O Qualifier U	RL 49.9 (GC)	Unit mg/Kg		<u> </u>	Analyzed 08/10/22 09:17	Dil Fac
Method: 8015 NM - Diesel Rar Analyte Total TPH Method: 8015B NM - Diesel Ra Analyte	nge Organic Result <49.9 ange Organi Result	S (DRO) (O Qualifier U	RL 49.9 (GC)	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 08/10/22 09:17 Analyzed	Dil Fac
Method: 8015 NM - Diesel Rar Analyte Total TPH Method: 8015B NM - Diesel Ra	nge Organic Result <49.9	S (DRO) (O Qualifier U	RL 49.9 (GC)	Unit mg/Kg		<u> </u>	Analyzed 08/10/22 09:17	Dil Fac
Method: 8015 NM - Diesel Rar Analyte Total TPH  Method: 8015B NM - Diesel Ra Analyte  Gasoline Range Organics	nge Organic Result <49.9 ange Organi Result	S (DRO) (O Qualifier U ics (DRO) Qualifier U	RL 49.9 (GC)	Unit mg/Kg		Prepared	Analyzed 08/10/22 09:17 Analyzed	Dil Fac
Method: 8015 NM - Diesel Rar Analyte Total TPH  Method: 8015B NM - Diesel Ra Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	nge Organic Result <49.9 ange Organi Result <49.9	S (DRO) (O Qualifier U ics (DRO) Qualifier U	(GC)  RL  49.9  RL  49.9	Unit mg/Kg  Unit mg/Kg		Prepared 08/08/22 14:50	Analyzed 08/10/22 09:17  Analyzed 08/10/22 01:37 08/10/22 01:37	Dil Fac
Method: 8015 NM - Diesel Rar Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	nge Organic Result <49.9 ange Organi Result <49.9 <49.9	S (DRO) (O Qualifier U ics (DRO) Qualifier U	(GC) RL 49.9  (GC) RL 49.9  49.9	Unit mg/Kg  Unit mg/Kg mg/Kg		Prepared 08/08/22 14:50 08/08/22 14:50	Analyzed 08/10/22 09:17  Analyzed 08/10/22 01:37 08/10/22 01:37	Dil Fac
Method: 8015 NM - Diesel Rar Analyte Total TPH  Method: 8015B NM - Diesel Ra Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	nge Organic Result <49.9 ange Organi Result <49.9 <49.9	S (DRO) (O Qualifier U ics (DRO) Qualifier U	GC) RL 49.9  (GC) RL 49.9  49.9  49.9	Unit mg/Kg  Unit mg/Kg mg/Kg		Prepared 08/08/22 14:50 08/08/22 14:50 08/08/22 14:50	Analyzed 08/10/22 09:17  Analyzed 08/10/22 01:37 08/10/22 01:37	Dil Fac

Client Sample ID: BH01A Lab Sample ID: 890-2730-2 Date Collected: 08/04/22 11:00 **Matrix: Solid** 

RL

25.0

Unit

mg/Kg

D

Prepared

Analyzed

08/12/22 18:49

Dil Fac

Result Qualifier

3780

Date Received: 08/05/22 11:06

Sample Depth: 1'

Analyte

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/09/22 14:20	08/11/22 04:37	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/09/22 14:20	08/11/22 04:37	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		08/09/22 14:20	08/11/22 04:37	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/09/22 14:20	08/11/22 04:37	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/09/22 14:20	08/11/22 04:37	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/09/22 14:20	08/11/22 04:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130			08/09/22 14:20	08/11/22 04:37	

Client: Ensolum Job ID: 890-2730-1

Project/Site: PLU 20-24-30 SDG: 03E1558088

Client Sample ID: BH01A Lab Sample ID: 890-2730-2 Date Collected: 08/04/22 11:00 **Matrix: Solid** Date Received: 08/05/22 11:06

Sample Depth: 1'

Surrogate	%Recovery	Qualifier Lim	nits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	88	70 -	. 130 08/	/09/22 14:20	08/11/22 04:37	1

## **Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg		_	08/11/22 10:57	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/10/22 09:17	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/08/22 14:50	08/10/22 01:59	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/08/22 14:50	08/10/22 01:59	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/08/22 14:50	08/10/22 01:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130	08/08/22 14:50	08/10/22 01:59	1
o-Terphenyl	97		70 - 130	08/08/22 14:50	08/10/22 01:59	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	5.00	mg/Kg			08/12/22 18:58	1

Lab Sample ID: 890-2730-3 **Client Sample ID: BH01B** Matrix: Solid

Date Collected: 08/04/22 11:30 Date Received: 08/05/22 11:06

Sample Depth: 7'

Mothod: 9021B	Volatile	Organic	Compounds	(CC)

Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Kesuit	Qualifier	KL	UIIIL		Frepareu	Allalyzeu	DII Fac
Benzene	< 0.00202	U	0.00202	mg/Kg		08/09/22 14:20	08/11/22 04:57	1
Toluene	<0.00202	U	0.00202	mg/Kg		08/09/22 14:20	08/11/22 04:57	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		08/09/22 14:20	08/11/22 04:57	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		08/09/22 14:20	08/11/22 04:57	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		08/09/22 14:20	08/11/22 04:57	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		08/09/22 14:20	08/11/22 04:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130			08/09/22 14:20	08/11/22 04:57	1
1,4-Difluorobenzene (Surr)	83		70 - 130			08/09/22 14:20	08/11/22 04:57	1

lothod:	Total	DTEV	Total	DTEV	Calculation	n

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00403	U	0.00403	mg/Kg			08/11/22 10:57	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg	_		08/10/22 09:17	1

**Matrix: Solid** 

Lab Sample ID: 890-2730-3

# **Client Sample Results**

 Client: Ensolum
 Job ID: 890-2730-1

 Project/Site: PLU 20-24-30
 SDG: 03E1558088

Client Sample ID: BH01B

Date Collected: 08/04/22 11:30 Date Received: 08/05/22 11:06

Sample Depth: 7'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/08/22 14:50	08/10/22 02:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/08/22 14:50	08/10/22 02:20	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/08/22 14:50	08/10/22 02:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130			08/08/22 14:50	08/10/22 02:20	1
o-Terphenyl	111		70 - 130			08/08/22 14:50	08/10/22 02:20	1

Method: 300.0 - Anions, Ion Chromatography - Soluble											
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac			
Chloride	215		5.04	mg/Kg			08/12/22 19:07	1			

1

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# **Surrogate Summary**

Client: Ensolum Job ID: 890-2730-1 Project/Site: PLU 20-24-30 SDG: 03E1558088

Method: 8021B - Volatile Organic Compounds (GC)

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

			Percen	t Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
₋ab Sample ID	Client Sample ID	(70-130)	(70-130)	
390-2717-A-1-H MS	Matrix Spike	104	93	
390-2717-A-1-I MSD	Matrix Spike Duplicate	103	94	
390-2730-1	BH01	123	90	
390-2730-2	BH01A	115	88	
390-2730-3	BH01B	114	83	
_CS 880-31852/1-A	Lab Control Sample	104	93	
CSD 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	
Surrogate Legend				

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

			Percent S	urrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)	
880-17808-A-5-C MS	Matrix Spike	94	95	
880-17808-A-5-D MSD	Matrix Spike Duplicate	96	98	
890-2730-1	BH01	105	122	
890-2730-2	BH01A	86	97	
890-2730-3	BH01B	98	111	
LCS 880-31783/2-A	Lab Control Sample	99	103	
LCSD 880-31783/3-A	Lab Control Sample Dup	87	93	
MB 880-31783/1-A	Method Blank	93	110	

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2730-1 Project/Site: PLU 20-24-30 SDG: 03E1558088

Method: 8021B - Volatile Organic Compounds (GC)

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

Lab Sample ID: LCS 880-31852/1-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
4-Bromofluorobenzene (Surr)	100		70 - 130	08/09/22 14:20	08/10/22 23:09
1,4-Difluorobenzene (Surr)	87		70 - 130	08/09/22 14:20	08/10/22 23:09

**Client Sample ID: Lab Control Sample** 

Prepared

Prep Type: Total/NA

Prep Type: Total/NA

35

70 - 130

**Client Sample ID: Matrix Spike** 

Analyzed

**Matrix: Solid Analysis Batch: 31883** Prep Batch: 31852 Spike LCS LCS %Rec

Analyte Added Result Qualifier Unit %Rec Limits Benzene 70 - 130 0.100 0.07639 mg/Kg 76 Toluene 0.100 mg/Kg 77 70 - 130 0.07711 Ethylbenzene 0.100 0.08089 mg/Kg 81 70 - 130 82 m-Xylene & p-Xylene 0.200 mg/Kg 70 - 130 0.1645 o-Xylene 0.100 0.09143 70 - 130 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 **Client Sample ID: Lab Control Sample Dup** 

0.100

**Matrix: Solid** 

o-Xylene

Analysis Batch: 31883							Prep E	atch: 3	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

0.09756

mg/Kg

LCSD LCSD

Surrogate	%Recovery C	Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

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

Analysis Batch: 31883										pe: Total/N. Batch: 3185	
-	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		

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Dil Fac

# QC Sample Results

Client: Ensolum Job ID: 890-2730-1 Project/Site: PLU 20-24-30 SDG: 03E1558088

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

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

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** 

Lab Sample ID: 890-2717-A-1-I MSD **Matrix: Solid** 

**Analysis Batch: 31883** 

Prep Type: Total/NA

Prep Batch: 31852 **RPD** 

Sample Sample Spike MSD MSD %Rec Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Benzene <0.00201 U 0.0998 0.09159 mg/Kg 70 - 130 4 35 92 Toluene <0.00201 U 0.0998 0.09133 91 70 - 130 35 mg/Kg Ethylbenzene <0.00201 U 0.0998 0.09450 mg/Kg 95 70 - 130 6 35 m-Xylene & p-Xylene <0.00402 U 0.200 0.1903 mg/Kg 95 70 - 130 6 35 <0.00201 U 0.0998 0.1047 105 o-Xylene mg/Kg 70 - 130

MSD MSD

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** 

**Analysis Batch: 31883** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31859

	1410								
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

MR MR

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 880-31783/1-A

**Matrix: Solid** 

**Analysis Batch: 31823** 

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

Prep Batch: 31783

MB MB Result Qualifier RL Unit Analyte Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 mg/Kg 08/08/22 14:50 08/09/22 21:20

(GRO)-C6-C10

Client: Ensolum

Job ID: 890-2730-1 Project/Site: PLU 20-24-30 SDG: 03E1558088

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

Lab Sample ID: MB 880-31783/1-A

**Matrix: Solid** 

**Analysis Batch: 31823** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31783

	IVID	MP MP								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/08/22 14:50	08/09/22 21:20	1		
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/08/22 14:50	08/09/22 21:20	1		
	Diesel Range Organics (Over C10-C28)	Analyte Result  Diesel Range Organics (Over <50.0 C10-C28)	Diesel Range Organics (Over <50.0 U	Analyte Result Qualifier RL  Diesel Range Organics (Over <50.0 U 50.0  C10-C28)	Analyte         Result Diesel Range Organics (Over C10-C28)         Result Qualifier Qualifier Unit Qualifier Unit Unit Unit Unit Unit Unit Unit Unit	AnalyteResult Diesel Range Organics (Over C10-C28)Qualifier Qualifier Unit Unit Unit Unit Unit Unit Unit Unit	Analyte Result Qualifier RL Unit Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 08/08/22 14:50 C10-C28)	Analyte         Result Diesel Range Organics (Over C10-C28)         Result Qualifier         RL Unit RL Diesel Range Organics (Over C10-C28)         Unit Diesel Range Organics (Over C10-C28)         D Prepared ON/ON/ON/ON/ON/ON/ON/ON/ON/ON/ON/ON/ON/O		

MB MB

MR ME

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
1-Chlorooctane	93		70 - 130	08/08/22 14:50 08/09/22 21:20	1
o-Terphenyl	110		70 - 130	08/08/22 14:50 08/09/22 21:20	1

**Client Sample ID: Lab Control Sample** 

Lab Sample ID: LCS 880-31783/2-A **Matrix: Solid** 

**Analysis Batch: 31823** 

Prep Type: Total/NA Prep Batch: 31783

LCS LCS Spike %Rec Added Result Qualifier Limits Analyte Unit %Rec Gasoline Range Organics 1000 874.9 mg/Kg 87 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 1000 964.0 mg/Kg 96 70 - 130

C10-C28)

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	99	70 - 130
o-Terphenyl	103	70 - 130

Lab Sample ID: LCSD 880-31783/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

**Analysis Batch: 31823** 

Prep Type: Total/NA Prep Batch: 31783

Spike LCSD LCSD %Rec **RPD Analyte** Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 1026 mg/Kg 103 70 - 130 16 20 (GRO)-C6-C10 70 - 130 Diesel Range Organics (Over 1000 810.2 mg/Kg 81 17 20 C10-C28)

LCSD LCSD %Recovery Qualifier Surrogate Limits 1-Chlorooctane 87 70 - 130 o-Terphenyl 93 70 - 130

Lab Sample ID: 880-17808-A-5-C MS

Released to Imaging: 12/6/2022 8:18:26 AM

**Matrix: Solid** 

**Analysis Batch: 31823** 

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

Prep Batch: 31783

Sample Sample Spike MS MS %Rec **Analyte** Result Qualifier Added Result Qualifier Unit %Rec Limits <50.0 U Gasoline Range Organics 999 924.3 93 70 - 130 mg/Kg (GRO)-C6-C10 <50.0 U 999 766.3 mg/Kg 77 70 - 130 Diesel Range Organics (Over

C10-C28)

	IVIS	IVIS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	95		70 - 130

Client: Ensolum Job ID: 890-2730-1 Project/Site: PLU 20-24-30 SDG: 03E1558088

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

Lab Sample ID: 880-17808-A-5-D MSD

**Matrix: Solid** 

**Analysis Batch: 31823** 

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Total/NA** 

Prep Batch: 31783

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	<50.0	U	999	1066		mg/Kg		107	70 - 130	14	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<50.0	U	999	778.6		ma/Ka		78	70 - 130	2	20

C10-C28)

MSD MSD

Surrogate	%Recovery (	Qualifier	Limits		
1-Chlorooctane	96		70 - 130		
o-Terphenyl	98		70 - 130		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31857/1-A **Client Sample ID: Method Blank** Matrix: Solid **Prep Type: Soluble** 

**Analysis Batch: 31928** 

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			08/12/22 14:31	1

Lab Sample ID: LCS 880-31857/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31928** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	248.1		mg/Kg		99	90 - 110	

Lab Sample ID: LCSD 880-31857/3-A **Client Sample ID: Lab Control Sample Dup Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 31928** 

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	256.3		mg/Kg		103	90 - 110	3	20	

Lab Sample ID: 880-17798-A-1-C MS

**Matrix: Solid** 

**Analysis Batch: 31928** 

	Sample Sample	e Spike	MS	MS				%Rec	
Analyte	Result Qualific	er Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	108	249	381 1		ma/Ka	_	110	90 - 110	

Lab Sample ID: 880-17798-A-1-D MSD

**Matrix: Solid** 

Released to Imaging: 12/6/2022 8:18:26 AM

**Analysis Batch: 31928** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	108		249	370.6		mg/Kg		106	90 - 110	3	20

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**Client Sample ID: Matrix Spike** 

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Lab Sample ID: 880-17801-A-1-G MS

**Matrix: Solid** 

# **QC Sample Results**

Client: Ensolum Job ID: 890-2730-1 Project/Site: PLU 20-24-30

SDG: 03E1558088

Method: 300.0 - Anions, Ion Chromatography (Continued)

**Client Sample ID: Matrix Spike** 

**Prep Type: Soluble** 

**Analysis Batch: 31928** %Rec Sample Sample Spike MS MS

Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Chloride 697 1250 2009 mg/Kg 105 90 - 110

Lab Sample ID: 880-17801-A-1-H MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 31928** Sample Sample Spike MSD MSD %Rec **RPD** 

Result Qualifier **Analyte** Added Result Qualifier Unit D %Rec Limits RPD Limit Chloride 697 1250 2031 90 - 110 mg/Kg 107

# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 20-24-30

Job ID: 890-2730-1 SDG: 03E1558088

**GC VOA** 

Prep Batch: 31852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2730-1	BH01	Total/NA	Solid	5035	
890-2730-2	BH01A	Total/NA	Solid	5035	
890-2730-3	BH01B	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
890-2730-1	BH01	Total/NA	Solid	8021B	31852
890-2730-2	BH01A	Total/NA	Solid	8021B	31852
890-2730-3	BH01B	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: 31996** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2730-1	BH01	Total/NA	Solid	Total BTEX	
890-2730-2	BH01A	Total/NA	Solid	Total BTEX	
890-2730-3	BH01B	Total/NA	Solid	Total BTEX	

**GC Semi VOA** 

Prep Batch: 31783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2730-1	BH01	Total/NA	Solid	8015NM Prep	
890-2730-2	BH01A	Total/NA	Solid	8015NM Prep	
890-2730-3	BH01B	Total/NA	Solid	8015NM Prep	
MB 880-31783/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31783/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31783/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17808-A-5-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-17808-A-5-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

**Analysis Batch: 31823** 

<b>Lab Sample ID</b> 890-2730-1	Client Sample ID BH01	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 31783
890-2730-2	BH01A	Total/NA	Solid	8015B NM	31783
890-2730-3	BH01B	Total/NA	Solid	8015B NM	31783
MB 880-31783/1-A	Method Blank	Total/NA	Solid	8015B NM	31783
LCS 880-31783/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31783

# **QC Association Summary**

 Client: Ensolum
 Job ID: 890-2730-1

 Project/Site: PLU 20-24-30
 SDG: 03E1558088

# **GC Semi VOA (Continued)**

# **Analysis Batch: 31823 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-31783/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31783
880-17808-A-5-C MS	Matrix Spike	Total/NA	Solid	8015B NM	31783
880-17808-A-5-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31783

# **Analysis Batch: 31889**

Lab Sample ID 890-2730-1	Client Sample ID BH01	Prep Type Total/NA	Matrix Solid	Method 8015 NM	Prep Batch
890-2730-2	BH01A	Total/NA	Solid	8015 NM	
890-2730-3	ВН01В	Total/NA	Solid	8015 NM	

# HPLC/IC

#### Leach Batch: 31857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2730-1	BH01	Soluble	Solid	DI Leach	
890-2730-2	BH01A	Soluble	Solid	DI Leach	
890-2730-3	BH01B	Soluble	Solid	DI Leach	
MB 880-31857/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31857/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31857/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-17798-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17798-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-17801-A-1-G MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17801-A-1-H MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 31928**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2730-1	BH01	Soluble	Solid	300.0	31857
890-2730-2	BH01A	Soluble	Solid	300.0	31857
890-2730-3	BH01B	Soluble	Solid	300.0	31857
MB 880-31857/1-A	Method Blank	Soluble	Solid	300.0	31857
LCS 880-31857/2-A	Lab Control Sample	Soluble	Solid	300.0	31857
LCSD 880-31857/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31857
880-17798-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	31857
880-17798-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31857
880-17801-A-1-G MS	Matrix Spike	Soluble	Solid	300.0	31857
880-17801-A-1-H MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31857

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Client: Ensolum

Project/Site: PLU 20-24-30

SDG: 03E1558088

**Client Sample ID: BH01** 

Date Collected: 08/04/22 10:30 Date Received: 08/05/22 11:06

Lab Sample ID: 890-2730-1

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	31852	08/09/22 14:20	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31883	08/11/22 04:16	SM	EET MID
Total/NA	Analysis	Total BTEX		1			31996	08/11/22 10:57	SM	EET MID
Total/NA	Analysis	8015 NM		1			31889	08/10/22 09:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	31783	08/08/22 14:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31823	08/10/22 01:37	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	31857	08/09/22 15:36	AJ	EET MID
Soluble	Analysis	300.0		5			31928	08/12/22 18:49	CH	EET MID

**Client Sample ID: BH01A** Lab Sample ID: 890-2730-2 Date Collected: 08/04/22 11:00

Date Received: 08/05/22 11:06

**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			5.02 g	5 mL	31852	08/09/22 14:20	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31883	08/11/22 04:37	SM	EET MID
Total/NA	Analysis	Total BTEX		1			31996	08/11/22 10:57	SM	EET MID
Total/NA	Analysis	8015 NM		1			31889	08/10/22 09:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31783	08/08/22 14:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31823	08/10/22 01:59	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	31857	08/09/22 15:36	AJ	EET MID
Soluble	Analysis	300.0		1			31928	08/12/22 18:58	CH	EET MID

Lab Sample ID: 890-2730-3 **Client Sample ID: BH01B** Date Collected: 08/04/22 11:30 Matrix: Solid

Date Received: 08/05/22 11:06

	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	31852	08/09/22 14:20	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31883	08/11/22 04:57	SM	EET MID
Total/NA	Analysis	Total BTEX		1			31996	08/11/22 10:57	SM	EET MID
Total/NA	Analysis	8015 NM		1			31889	08/10/22 09:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	31783	08/08/22 14:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31823	08/10/22 02:20	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	31857	08/09/22 15:36	AJ	EET MID
Soluble	Analysis	300.0		1			31928	08/12/22 19:07	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: 890-2730-1

 Project/Site: PLU 20-24-30
 SDG: 03E1558088

# **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	NE	ELAP	T104704400-22-24	06-30-23
The following analyte the agency does not		ort, but the laboratory is r	not certified by the governing authority.	This list may include analytes for which
and agency does not	oner certification.			
Analysis Method	Prep Method	Matrix	Analyte	
0 ,		Matrix Solid	Analyte Total TPH	

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# **Method Summary**

Client: Ensolum

Project/Site: PLU 20-24-30

Job ID: 890-2730-1

SDG: 03E1558088

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: PLU 20-24-30

Job ID: 890-2730-1

SDG: 03E1558088

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Dep
890-2730-1	BH01	Solid	08/04/22 10:30	08/05/22 11:06	0.5'
890-2730-2	BH01A	Solid	08/04/22 11:00	08/05/22 11:06	1'
890-2730-3	BH01B	Solid	08/04/22 11:30	08/05/22 11:06	7'

of set Cir

**Environment Testing** 

eurofins:

Address: City, State ZIP:

3122 National Parks Hwy

Address:

City, State ZIP:

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

State of Project:

Program: UST/PST ☐PRP ☐Brownfields ☐RRC ☐ Superfund

**Work Order Comments** 

www.xenco.com

Page

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Reporting: Level II | Level III | PST/UST | TRRP | Level IV |

Bill to: (if different)

Company Name:

Carlsbad, NM 88220

Ensolum

Project Manager: company Name:

Tacoma Morrissey

# 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:

Phone: 3	3372578307			Email:	Email: tmorrissey@ensolum.com	y@ens	olum.c	om		L'annual L'a			
Project Name: F	PLU 20-24-30			Turn	Turn Around					ANALYSIS REQUEST		Preservative Codes	Codes
ň	03E1558088			☑ Routine	☐ Rush	0.7	Code				7	None: NO DI	DI Water: H <sub>2</sub> O
Project Location: E	EDDY County			Due Date:		L						Cool: Cool M	MeOH: Me
	Chris Brown			TAT starts the day received by	day receive	ed by			_				HNO <sub>3</sub> : HN
				the lab, if received by 4:30pm	eived by 4:3	Opm	rs					H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> N <sub>2</sub>	NaOH: Na
SAMPLE RECEIPT	Temp Blank:		Yes No	Wet Ice:	1 (SM)	N <sub>O</sub>	nete	.0)				H₃PO₄: HP	
Samples Received Intact:	(Wes)	No Th	Thermometer ID:	r ID:	イアろう	8		300			7	NaHSO <sub>4</sub> : NABIS	
Cooler Custody Seals:	<u>≺</u>	AN CO	Correction Factor:	actor:	.0.	6)		PA:	_		7	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	
Sample Custody Seals	Yes No	Te Te	Temperature Reading:	Reading:	7.5			5 (E		890-2730 Chain of Custody	Z	Zn Acetate+NaOH: Zn	Zn
Total Containers:		Co	rected Te	Corrected Temperature:	2	٧		_	-		7	NaOH+Ascorbic Acid: SAPC	d: SAPC
Sample Identification	ification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ #	Cont	TPH (80	BTEX (			Sample Comments	ments
SS01		S	8-4-22	1030	.5ft G	<u>د</u>	_	×	×			Incident ID:	
SS02		S 8-	8-4-22	1100	1ft G	G)	×		×			nAPP2217544243	
SS03		S 8	8-4-22	1130	7ft (	G 1	×	×	×			Cost Center:	
						_	-	-				1081091001	
						_		-				AFE:	
								H					
								+	+				
<b>Total 200.7 / 6010 200.8 / 6020:</b> Circle Method(s) and Metal(s) to be analyzed	0 200.8 / 6020: Metal(s) to be an:	20: analyzed		8RCRA 13F	TCLP / SPLP 6010: 8RCRA	Texas 11 6010: 8RC		As Ba	Be Be	B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	K Se A	g SiO <sub>2</sub> Na Sr Tl Sn ∪ V Zn Hg: 1631 / 245.1 / 7470 / 7471	7
otice: Signature of this do service. Eurofins Xenco Eurofins Xenco. A minim	ocument and relinqui will be liable only fo num charge of \$85.00	shment of sa r the cost of will be app	amples cons samples and lied to each I	titutes a valid po d shall not assu project and a ch	urchase orde me any responance of \$5 fo	r from cli onsibility ( r each sa	ent comp for any ic mple sub	any to E	expenses Eurofins	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 sarvice. 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.	t assigns standard terms and conditions due to circumstances beyond the control will be enforced unless previously negotiated.		
Relinquished by: (Signature)	(Signature)	1	Received	Received by: (Signature)	ture)		D	Date/Time	ne	Relinquished by: (Signature)	Received by: (Signature)		Date/Time
St.		Am	mone	La X	Lut	6	9/5/	66	110				
		1			6								
										6			

# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-2730-1

SDG Number: 03E1558088

Login Number: 2730 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: 890-2730-1

SDG Number: 03E1558088

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	

Released to Imaging: 12/6/2022 8:18:26 AM

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8/17/2022 (Rev. 1)

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<6mm (1/4").



APPENDIX E

**NMOCD Notifications** 

# Collins, Melanie

Baker, Adrian From:

Sent: Saturday, June 11, 2022 8:06 AM

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

Jennifer, EMNRD

Cc: DelawareSpills /SM; McSpadden, Wes; Sanders, David; Pennington, Shelby G; Green,

Garrett J

**Subject:** 24 hour notification - PLU 20-24-30 Battery release date 6-10-22

**Follow Up Flag:** Follow up Flag Status: Flagged

All,

This is notification of a release greater than 25 barrels that occurred yesterday at the PLU 20-24-30 Battery near the GPS coordinates given below. All fluid remained in containment and was removed by vacuum truck. Details will be provided with a form C-141. Please contact us with any questions or concerns.

GPS: 32.210, -103.900

Thank you,

#### Adrian Baker

**Environmental Coordinator** Permian Business Unit

XTO Energy Inc. 6401 N. Holiday Hill Dr. Midland, Tx 79707 Mobile:(432)-236-3808

adrian.baker@exxonmobil.com

# Collins, Melanie

From: Green, Garrett J

**Sent:** Tuesday, June 21, 2022 3:57 PM

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

Jennifer, EMNRD

**Cc:** DelawareSpills /SM

**Subject:** XTO 48 Hour Liner Notification - PLU 20-24-30 Released on 6-10-22

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at PLU 20-24-30 released on (6/10/22), on Friday, June 24, 2022, at 10am MST. A 24 hour release notification was sent out on Saturday, June 11, 2022 8:06 AM since the release was greater than 25 barrels in volume. Please call us with any questions or concerns.

GPS Coordinates: (32.210, -103.900)

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 141256

#### **CONDITIONS**

Operator:	OGRID:
XTO ENERGY, INC	5380
·	Action Number:
Midland, TX 79707	141256
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created B	y Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2217544243 POKER LAKE UNIT 20-24-30 TANK BATTERY, thank you. This closure is approved.	12/6/2022