	Page 1 of 203	3
Incident ID	nAPP2216152113	
District RP		
Facility ID		
Application ID		

Remediation Plan

Remediation Plan Checklist: Each of the following items must be	included in the plan.
 □ Detailed description of proposed remediation technique □ Scaled sitemap with GPS coordinates showing delineation point □ Estimated volume of material to be remediated □ Closure criteria is to Table 1 specifications subject to 19.15.29.1 □ Proposed schedule for remediation (note if remediation plan times) 	2(C)(4) NMAC
Deferral Requests Only: Each of the following items must be con-	firmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around predeconstruction.	oduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human health	, the environment, or groundwater.
I hereby certify that the information given above is true and complet rules and regulations all operators are required to report and/or file c which may endanger public health or the environment. The acceptal liability should their operations have failed to adequately investigate surface water, human health or the environment. In addition, OCD a responsibility for compliance with any other federal, state, or local latest the surface water.	ertain release notifications and perform corrective actions for releases nce of a C-141 report by the OCD does not relieve the operator of and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name:Garrett Green	Title: Environmental Coordinator
Signature: _ Sath Sur	Date: <u>08/26/2022</u>
email: garrett.green@exxonmobil.com	Telephone: _575-200-0729
OCD Only Jocelyn Harimon Received by:	08/26/2022 Date:
☐ Approved ☐ Approved with Attached Conditions of A	Approval Denied 🗓 Deferral Approved
Signature: Robert Hamlet	Date: 11/30/2022

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	NAPP2216152113
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

D 21	D .			CCDID			
<u>.</u>				OGRID 5380			
Contact Name Garrett Green				Contact Telephone 575-200-0729			
		en@exxonmobil.c			(assigned by OCD)		
Contact mail	ing address	3104 E. Greene St	reet, Carlsbad, Nev	w Mexico, 88220			
			Location	of Release So	ource		
Latitude 32	.37987			Longitude _	-103.88675		
			(NAD 83 in dec	imal degrees to 5 decim	nal places)		
Site Name Ja	ames Ranch	Unit DI 1A		Site Type T	ank Battery		
Date Release				API# (if app)			
		03/30/2022					
Unit Letter	Section	Township	Range	Coun	ty		
F	21	22S	30E	EDD	Y		
	Materia	l(s) Released (Select al	I that apply and attach	Volume of F	justification for the volumes pr		
Crude Oil		Volume Release			Volume Recovered (bbls)		
× Produced	Water	Volume Release	.02		Volume Recovered (bbls) 0.00		
			ion of total dissolv water >10,000 mg/	,	Yes No		
Condensa	ite	Volume Release	d (bbls)		Volume Recovered (bbls)		
☐ Natural G	ias	Volume Release	d (Mcf)		Volume Recovered (Mcf)		
Other (describe) Volume/Weight Released (provide units)		units)	Volume/Weight Recovered (provide units)				
Cause of Rel	ease LO res _j A third	l ponded to alarm to -party contractor h	find flames on the as been retained fo	e pumps. Fire depar or remediation purp	tment was notified and cooses.	operators extinguished the fire.	

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Page 2 Oil Conservation Division

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Was this a major release as defined by	If YES, for what reason(s) does the respon	sible party consider this a major release?
19.15.29.7(A) NMAC?	Fire at facility.	
🗷 Yes 🗌 No		
TCX/EC ' 1' 4		9 W7 11 1 4 (1 2 4)
*	•	om? When and by what means (phone, email, etc)? EMNRD; mike.bratcher@state.nm.us on Tuesday, May 31, 2022
1:02 PM via email.	0 00000, 110 00000,	2.11 (12), miletorium (golulem mus en 1 ueseu), mily e 1, 2022
	Initial Ro	esponse
The responsible	party must undertake the following actions immediatel	v unless they could create a safety hazard that would result in injury
The source of the rela	ease has been stopped.	
▼ The impacted area has	s been secured to protect human health and	the environment.
Released materials ha	ave been contained via the use of berms or d	ikes, absorbent pads, or other containment devices.
➤ All free liquids and re	ecoverable materials have been removed and	d managed appropriately.
	d above have <u>not</u> been undertaken, explain v	vhy:
NA		
has begun, please attach	a narrative of actions to date. If remedial	emediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred lease attach all information needed for closure evaluation.
regulations all operators are public health or the environt failed to adequately investig	required to report and/or file certain release notinent. The acceptance of a C-141 report by the Cate and remediate contamination that pose a thre	best of my knowledge and understand that pursuant to OCD rules and fications and perform corrective actions for releases which may endanger 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
Printed Name: Garrett G	reen	Title: SSHE Coordinator
Signature:	H Suer	Date: 06/10/2022
email: garret.green@exx	onmobil.com	Telephone: 575-200-0729
OCD O		
OCD Only		22/12/222
Received by:Jocelyn	Harimon	Date: 06/10/2022

Location:	James Ranch Unit DI 1A Battery		
Spill Date:	5/30/2022		
	Area 1		
Approximate A	rea =	251.00	sq. ft.
Average Satura	tion (or depth) of spill =	0.15	inches
Average Porosi	ty Factor =	0.03	
	VOLUME OF LEAK		
Total Crude Oil	=	0.00	bbls
Total Produced	Water =	0.02	bbls
	TOTAL VOLUME OF LEAK		
Total Crude Oil	=	0.00	bbls
Total Produced	l Water =	0.02	bbls
	TOTAL VOLUME RECOVERED		
Total Crude Oil	=	0.00	bbls
Total Produced	Water =	0.00	bbls

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Incident ID	nAPP2216152113	
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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>>100</u> (ft bgs)		
Did this release impact groundwater or surface water?	☐ Yes ⊠ No		
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No		
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No		
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No		
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ No		
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No		
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No		
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No		
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No		
Are the lateral extents of the release overlying an unstable area such as karst geology?	⊠ Yes □ No		
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No		
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ⊠ No		
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.			
Characterization Report Checklist: Each of the following items must be included in the report.			
 Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wel Field data Data table of soil contaminant concentration data Depth to water determination 	ls.		

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.

Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release

Photographs including date and GIS information

Laboratory data including chain of custody

Boring or excavation logs

Topographic/Aerial maps

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nΔPP22161	52112				

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District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					
Printed Name: _Garrett Green	Title: _Environmental Coordinator				
Signature: Sath Sur	Date:08/26/2022				
email: garrett.green@exxonmobil.com	Telephone: 575-200-0729				
OCD Only					
Received by:Jocelyn Harimon	Date:				

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Incident ID	nAPP2216152113	
District RP		
Facility ID		
Application ID		

Remediation Plan

Remediation Plan Checklist: Each of the following items must be it	ncluded in the plan.					
Detailed description of proposed remediation technique Scaled sitemap with GPS coordinates showing delineation points Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)						
<u>Deferral Requests Only</u> : Each of the following items must be confident	rmed as part of any request for deferral of remediation.					
Contamination must be in areas immediately under or around production.	duction equipment where remediation could cause a major facility					
Extents of contamination must be fully delineated.						
☐ Contamination does not cause an imminent risk to human health, t	he environment, or groundwater.					
Signature:email: garrett.green@exxonmobil.com	tain release notifications and perform corrective actions for releases e of a C-141 report by the OCD does not relieve the operator of nd remediate contamination that pose a threat to groundwater, ceptance of a C-141 report does not relieve the operator of					
OCD Only Jocelyn Harimon Received by:	08/26/2022 Date:					
☐ Approved	pproval					
Signature: D	ate:					



August 26, 2022

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

Re: Deferral Request

James Ranch Unit DI 1A

Incident Number nAPP2216152113

Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this Deferral Request to document site assessment and soil sampling activities at the James Ranch Unit DI 1A (Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of produced water due to a fire within a lined pump containment at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this Deferral Request, describing site assessment and delineation activities that have occurred and requesting deferral of final remediation for Incident Number nAPP2216152113 until the Site is reconstructed, and/or the well pad is abandoned.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit F, Section 21, Township 22 South, Range 30 East, in Eddy County, New Mexico (32.37987° N, 103.88675° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On May 30, 2022, a fire on the pump equipment resulted in the release of approximately 0.2 barrels (bbls) of produced water into the lined tank battery containment. The fire department was contacted and the fire was extinguished. No fluids were recovered. The fire caused damage to the containment liner. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on May 31, 2022, and submitted a Release Notification Form C-141 (Form C-141) on June 10, 2022. The release was assigned Incident Number nAPP2216152113.

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 705 W. Wadley, Suite 210 | Midland, TX 78209 | ensolum.com Texas PG Firm No. 50588 | Texas PE Firm No. F-21843



Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on the nearest groundwater well with depth to water data. The nearest groundwater well with depth to water data is the New Mexico Office of the State Engineer (NMOSE) well C-01916, located approximately 0.23 miles east of the site. The well has a total depth of 188 feet bgs and a depth to groundwater of 110 feet bgs. All wells used to determine the regional depth to groundwater are depicted on Figure 1 and the referenced well logs are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is an intermittent riverine, located approximately 725 feet southwest 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 underlain by unstable geology (high 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): 100 mg/kg
- Chloride: 600 mg/kg

SITE ASSESSMENT ACTIVITIES

On June 14, 2022, July 21, 2022, and August 2, 2022, Ensolum personnel visited the Site to evaluate the release extent and conduct site assessment activities. One borehole (BH01) was advanced via hand auger near the location of the damage in the liner to assess the vertical extent of impacted soil. Delineation soil samples were collected from borehole BH01 at depths ranging from 1-foot to 6 feet bgs. Four additional potholes (PH01 through PH04) were advanced via backhoe around the lined containment to confirm the lateral extent of the release. Discrete delineation soil samples were collected from each pothole at depths ranging from 1-foot to 5 feet bgs. Soil from the borehole and potholes was field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results and observations from the borehole and potholes were documented on lithologic/soil sampling logs, which are included as Appendix B. The borehole and potholes were backfilled with the soil removed and XTO repaired the tear in the liner. The delineation soil sample locations are depicted on Figure 2. Photographic documentation 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 procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline rang organics (GRO), TPH-diesel range organics (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 collected from borehole BH01, indicated TPH and/or chloride concentrations exceeded the Closure Criteria to a total depth of 5 feet bgs, directly beneath the tear in the liner. Subsequent delineation sample BH01B, collected at 6 feet bgs, indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria.

Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH04, collected at depths ranging from 1-foot to 5 feet bgs around the lined containment, indicated benzene, BTEX, TPH-DRO/TPH-GRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

DEFFERAL REQUEST

XTO is requesting deferral of final remediation due to the presence of active production equipment and surface pipelines within the lined containment. The impacted soil is limited to the area immediately beneath the lined containment and active production equipment, where remediation would require a major facility deconstruction.

The impacted soil remaining in place beneath the liner is delineated vertically by delineation soil sample BH01D collected at 6 feet bgs and laterally by delineation soil samples from potholes PH01 through PH04. A maximum of 65 cubic yards of TPH and chloride impacted soil remains in place beneath the liner assuming a maximum 5-foot depth based on the delineation soil samples listed above.

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was determined to be greater than 100 feet bgs, the release was contained laterally by the lined containment, and the impacted soil remaining in place is limited to the area immediately beneath the liner. The liner has been repaired by XTO and will restrict future vertical migration of residual impacts.

Based on the presence of active production equipment within the release area and the complete lateral and vertical delineation of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Number nAPP2216152113 until final reclamation of the well pad or major construction, whichever comes first.

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

Sincerely, Ensolum, LLC

Tacoma Morrissey Senior Geologist

Mouissey

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

Ashley L. Ager

cc: Garrett Green, XTO



Shelby Pennington, XTO Bureau of Land Management

Appendices:

Figure 1 Site Receptor Map

Figure 2 Delineation Soil Sample Locations
Table 1 Soil Sample Analytical Results
Appendix A Appendix B Lithologic / Soil Sampling Logs

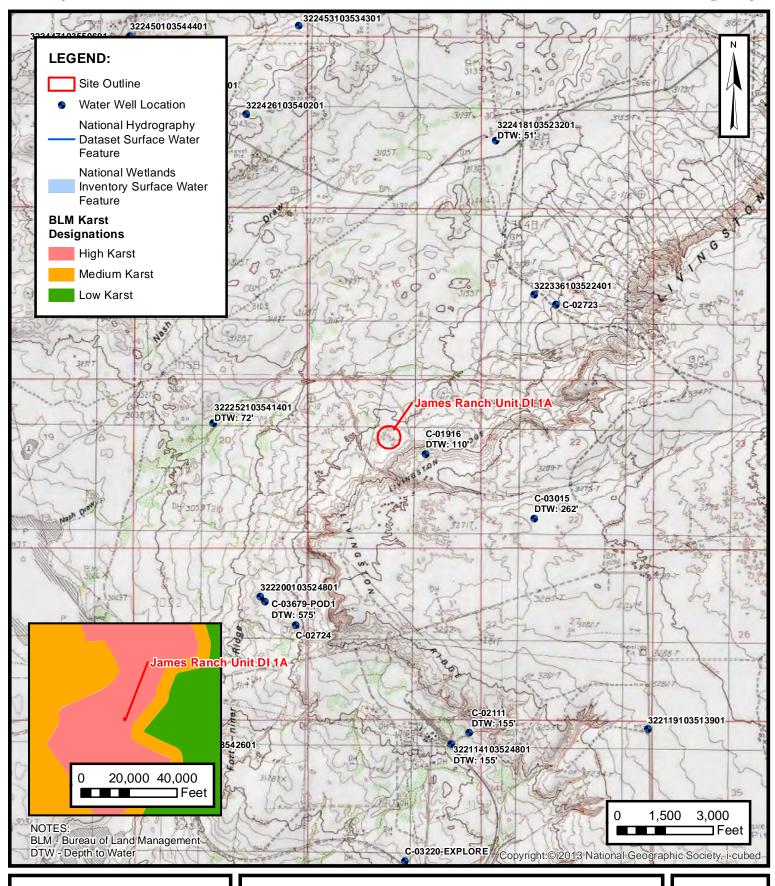
Appendix C Photographic Log

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

Appendix E NMOCD Notifications



FIGURES



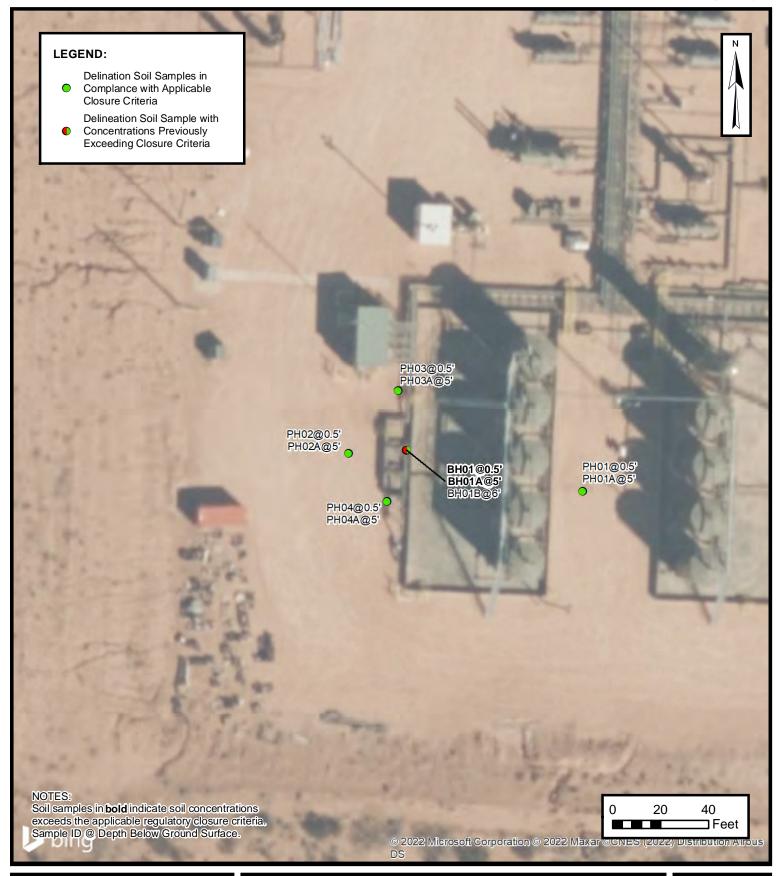


SITE RECEPTOR MAP

XTO ENERGY, INC JAMES RANCH UNIT DI 1A

Incident Number: Unit F, Sec 21, T22S, R30E Eddy County, New Mexico **FIGURE**

1





DELINEATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC JAMES RANCH UNIT DI 1A NAPP2216152113 Unit F, Sec 21, T22S, R30E Eddy County, New Mexico FIGURE

2



TABLES

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TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS James Ranch Unit DI 1A 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	NMOCD Table 1 Closure Criteria (NMAC 19.15.29)		10	50	NE	NE	NE	NE	100	600
				Del	ineation Soil San	nples				
BH01	06/14/2022	0.5	<0.00200	<0.00401	<50.0	60.2	53.4	60.2	114	7,590
BH01A	06/14/2022	5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	635
BH01B	06/14/2022	6	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	347
PH01	07/21/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	148
PH01A	07/21/2022	5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	25.0
PH02	08/02/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	309
PH02A	08/02/2022	5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	360
PH03	08/02/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	444
PH03A	08/02/2022	5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	302
PH04	08/02/2022	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	211
PH04A	08/02/2022	5	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	10.1

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



WELL PLUGGING PLAN OF OPERATIONS



NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging.

	There is no filing fee for this for this for this for the form of the forethe form of the	orm.			
Existing Office of the	ne State Engineer POD Number	er (Well Nun	nber) for well t	o be plugged: C 01916	
Name of well owner	r: BOPCO L.P.				
Mailing address: _	P.O. Box 2760	<u> </u>		<u> </u>	
City:M	idland	State:	Texas	Zip code:	79702
Phone number:	432- 556 -8730		E-mail:	TASavoie@Basspet.com	
	LER INFORMATION:				

Well D	Oriller contracted to provid	e plugging servic	es: Strau	b Corpora	tion – Raymond Strau	b
New N	Mexico Well Driller Licens	e No.: <u>WD-</u>	1478		Expiration Date:	June-2013
	/ELL INFORMATION: A copy of the existing We				•	STATE ENG ROSWELL 1913 APR
1)	GPS Well Location:	Latitude: Longitude:	32 deg,	<u>22</u> 53	min, <u>54.42</u> s min, <u>00.57</u> s	PR -1 83 OFF
2)	Reason(s) for plugging useable quality.					Water quality is below
3)		rameters were m	onitored. If the	well was	used to monitor conta	VII of this form to detai aminated or poor quality to plugging.
4)	Does the well tap brack	ish, saline, or oth	erwise poor qualit	y water? _	YES If yes, pro	ovide additional detail,
	including analytical resu	ults and/or labora	tory report(s):	See A	ttachments	

Static water level: ~ 110 feet below land surface / feet above land surface (circle one)

Well Plugging Plan Version: December, 2011 Page 1 of 5

> C-1916 465776

Depth of the well: 188 feet

5)

6)

7)	Inside diameter of innermost casing: inches.
8)	Casing material: Steel
9)	The well was constructed with:
	UNKWN an open-hole production interval, state the open interval:
	<u>UNKWN</u> a well screen or perforated pipe, state the screened interval(s):
10)	What annular interval surrounding the artesian casing of this well is cement-grouted? NA
11)	Was the well built with surface casing?UNKWN If yes, is the annulus surrounding the surface casing
	grouted or otherwise sealed? If yes, please describe:
12)	Has all pumping equipment and associated piping been removed from the well? yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.
V. DES	SCRIPTION OF PLANNED WELL PLUGGING:
pipe, a	f this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional information, such as geophysical logs, that are necessary to adequately describe the proposal.
1)	Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology
	proposed for the well: The casing will be cut off below ground surface. A tremie line will be install and a
	Portland Type II/ V Cement grout will be placed from the bottom to within 5' of the surface. A concrete cap will be
	placed from 5' to 1' and the remainder will be filled with soil.
2)	Will well head be cut-off below land surface after plugging?
VI. PL	UGGING AND SEALING MATERIALS:
	The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant
1)	For plugging intervals that employ cement grout, complete and attach Table A.
2)	For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
3)	Theoretical volume of grout required to plug the well to land surface: 20 Sacks
4)	Type of Cement proposed: See Attached Conditions of Approval C.6 See Attached Conditions of Approval C.6 Proposed cement grout mix: 8 gallons of water per 94 pound sack of Portland cement.
5)	Proposed cement grout mix: 8 gallons of water per 94 pound sack of Portland cement.
6)	Will the grout be: batch-mixed and delivered to the site
	$X_{\underline{\hspace{1cm}}}$ mixed on site

7)	Grout additives requested, and percent by dry weight re	elative to cement:	:	Salt water gel -	The u	ise of Ful	ler's
	Earth is to help with leak-off to the formation. Since the	he formation water	er is hi	gh in chlorides, Vo	olclay	<u>Sodium</u>	
	Bentonite will not be acceptable. 5 LBS. of Gel per 94	LBS. of cement			<u>.</u>		
	SEE Attached Cond	litions o	, Ç	Approval		1 4 €.	
8)	Additional notes and calculations:((dia. ² * 0.005454)*Dep	th)/ 1.25 cuft-bag			
VII.	ADDITIONAL INFORMATION: List additional inform	nation below, or	on sep	arate sheet(s):			
	Public Land Survey is Section 21, Township 22 South, Rai	,					
11101	uone Land Survey is Section 21, Township 22 South, Kar	ige 30 Last.					
		,					
I, and an pertain	Raymond L Straub Jr., P.G., say that I have c ay attachments, which are a part hereof; that I am familiar ning to the plugging of wells and will comply with them, a f Operations and attachments are true to the best of my kr	with the rules and and that each and	d regul all of t	ations of the State	Engir ne We	ieer .	
		Signature of Appli	icant		0512	Date	1
	CTION OF THE STATE ENGINEER: Well Plugging Plan of Operations is:				2013 APR - 1	STATE ENGINEER OFFICE	
	Approved subject to the attached conditions. Not approved for the reasons provided on the				7) 	FR OFF	
	Witness my hand and official seal this	day of <u>Apri</u>	1	, 13	ھ_		
		Scott A. Verhines, By: Lim Tim Willi Carlsbad	le/s ams	Engineer Cleans n Watermaste	-		

Well Plugging Plan Version: December, 2011 Page 3 of 5

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

Interval 1 – deepest	Interval 2	Interval 3 – most shallow
		Note: if the well is non-artesian and breaches only one aquifer, use only this column.
		5 feet
	1 1	188 feet
		20 Sacks
		8 gallons
		On-site
		5% Saltwater Bentonite
		5 LBS.
		STATE ENGINEER OFFICE RIDSWELL P 1: 19
	Interval 1 — deepest	Interval 1 – deepest Interval 2

Well Plugging Plan Version: December, 2011 Page 4 of 5

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval I – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

STATE ENGINEER OF THE ROSWELL PROPERTY OF THE PROPERTY OF THE

Well Plugging Plan Version: December, 2011 Page 5 of 5



STATE OF NEW MEXICO

OFFICE OF THE STATE ENGINEER ROSWELL

Scott A. Verhines, P.E.

State Engineer

DISTRICT II

1900 West Second St. Roswell, New Mexico 88201 Phone: (575) 622-6521 Fax: (575) 623-8559

April 17, 2013

BOPCO, L.P. P.O. Box 2760 Midland, Texas 79702

RE: Well Plugging Plan of Operations for C-1916

Greetings:

Enclosed is your copy of the Well Plugging Plan for the above referenced project. The attached Conditions of Approval modify your Plan in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted August 31, 2005 by the State Engineer. Should you have any questions about the Plan or Conditions of Approval please do not hesitate to contact our office.

Sincerely,

Catherine Goetz

Water Resource Specialist

District II Office of the State Engineer

Enclosures

cc: Office of the State Engineer Santa Fe

Straub Corporation

Analytical Laboratory Report for: BOPCO



Account Representative: Willis Mossman

Production Water Analysis

Listed below please find water analysis report from: Perry R Bass Wsw, WATER SUPPLY **WELL**

Lab Test Number		Sample Date	
201301003615		02/13/2013	
Specific Gravity: TDS: pH:	1.100 153402 6.65		
Cations	. <u> </u>	mg/L_	
Calcium as Ca" Magnesium as Mg" Sodium as Na' Iron as Fe" Potassium as K' Barium as Ba" Strontium as Sr" Manganese as Mn"		2669 2188 52812 9.49 7466.0 0.28 86.46 0.46	
Anions Bicarbonate as HCO ₃		mg/L 171	
Sulfate as SO ₄ Chloride as Cl		6500 81500	STATE ENG ROSWEIN 2013 APR
Gases		mg/L	R - NGIN
Carbon Dioxide as CO ₂ Hydrogen Sulfide as H ₂ S Lab Comments: SURFACE TEMP.=65.7°F		30 0.0	APR -1 P 1: 19

Analytical Laboratory Report for: BOPCO



Account Representative: Willis Mossman

DownHole SAT[™] Scale Prediction @ 250 deg. F

Lab Test Number	Sample Date	Location	
201301003615	02/13/2013	WATER SUPPLY WELL	
Mineral Scale	Saturation Index	Momentary Excess (lbs/1000 bbls)	
Calcite (CaCO3)	0.46	-0.05	
Strontianite (SrCO3)	0.00	-25.80	
Anhydrite (CaSO4)	6.85	1699.09	
Gypsum (CaSO4*2H2O)	1.55	710.25	
Barite (BaSO4)	0.07	-6.67	
Celestite (SrSO4)	0.23	-487.80	
Siderite (FeCO3)	3.44	0.04	
Halite (NaCl)	0.04	-545840.63	
Iron sulfide (FeS)	0.00	-1.34	

Interpretation of DHSat Results:

The Saturation Index is calculated for each mineral species independently and is a measure of the degree of supersaturation (driving force for precipitation) under the conditions modeled. This value ranges from 0 to infinity with 1.0 representing a condition of equilibrium where scale will neither dissolve nor precipitate. Values less than 1.0 are undersaturated and values greater than 1.0 are supersaturated. The Momentary excess is a measure of how much scale would have to precipitate to bring the system back to a non-scaling condition. This value ranges from negative (dissolving) to positive (precipitating) values. The Momentary Excess represents the amount of scale possible while the Saturation Level represents the probability that scale will form.





New Mexico Office of the State Engineer **Transaction Summary**

All Applications Under Statute 72-12-1

Transaction Number: 199433

Transaction Desc: C 01916

File Date: 07/31/1980

Primary Status:

EXP

Secondary Status: EXP

Expired

Expired Permit

Person Assigned: myigil

Applicant: PERRY R. BASS

1	F١	Je	'n	te

Date	Туре	Description	Comment	Processed By
07/31/1980	APP	Application Received	*	mvigil
08/04/1980	FIN ·	Final Action on application		mvigil
08/04/1980	WAP	General Approval Letter		mvigil
09/01/1981	EXP	Expired Permit (well log late)		mvigil

Change To:

WR File Nbr

Acres

Diversion

Consumptive Purpose of Use

C 01916

3

PRO 72-12-1 PROSPECTING OR **DEVELOPMENT OF NATURAL**

**Point of Diversion

RESOURCE

C 01916

605068 3582947*

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

Remarks

WATER SUPPLY WELL FOR THE DRILLING OF JAMES RANCH UNIT

Conditions

- Appropriation and use of water under this permit shall not exceed a period of one year from the date of approval.
- A totalizing meter shall be installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer; the Engineer shall be advised of the make, model, serial number. date of installation, and initial reading of the meter prior to appropriation of water; pumping records shall be submitted to the District Supervisor for each calendar month on or before the 10th day of the following month.
- The well shall be plugged upon completion of the permitted use, and a plugging report shall be filed with the State Engineer within 10 days.

Action of the State Engineer

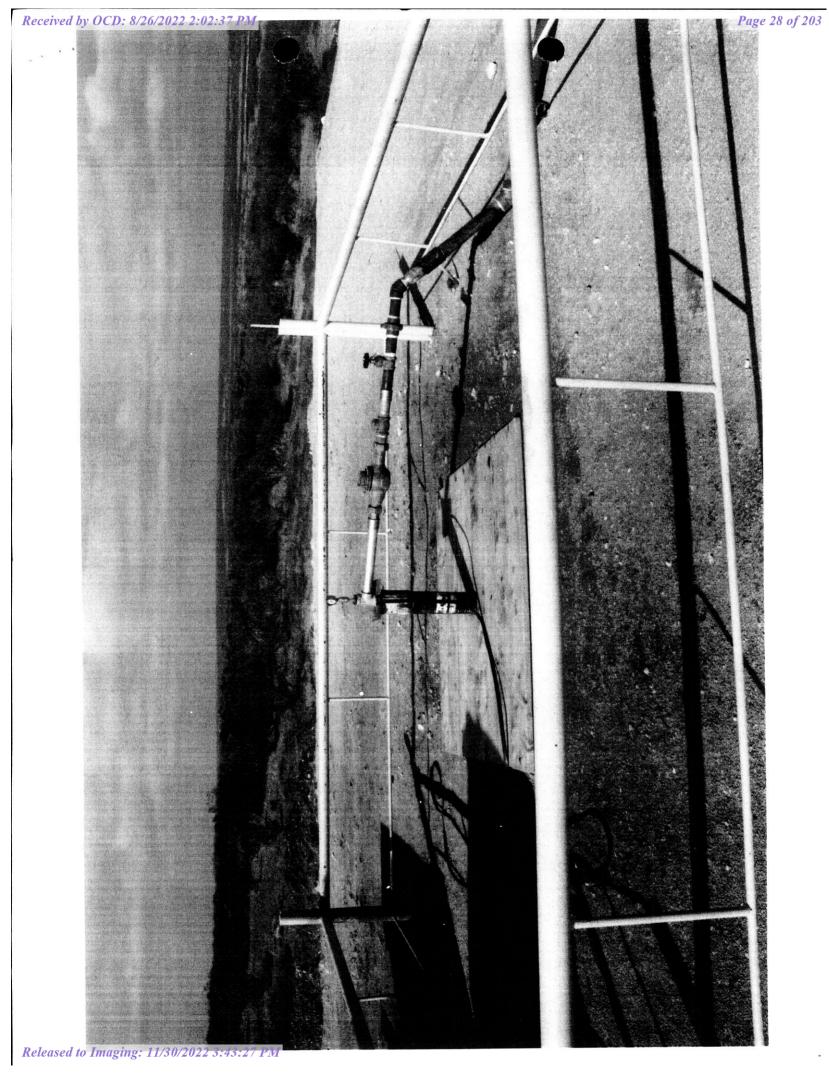
Approval Code: A - Approved **Action Date:** 08/04/1980 Log Due Date: 08/31/1981

State Engineer:

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

Conditions of Approval for C-1916 abandonment:

- 1) Plugging operations will be conducted in accordance with NMED, NMOCD, or other State or Federal agency having oversight for the above described project.
- 2) The well shall be plugged using a cement slurry (5.2 gals water per 94lb bag of Portland cement). It is understood that due to the high sulfate content Type V cement will be used as the data provided on water quality indicates 6,500 ppm sulfates. The cement grout will be pumped via tremie line from bottom up.
- 3) By item 2 above, the plan meets OSE requirements for tremie/grout abandonment, however, well records are not available to confirm well design/annular seals.





USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

USGS Water Resources	Data Category:	Geographic Area:		
5565 Water Resources	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.
- Full News

Groundwater levels for the Nation

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

Search Results -- 1 sites found

site no list =

• 322252103541401

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 322252103541401 22S.30E.20.12310

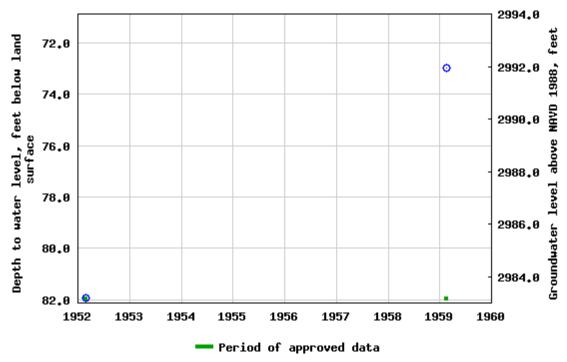
Available data for this site Groundwater: Field measurements V GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°22'52", Longitude 103°54'14" NAD27
Land-surface elevation 3,065 feet above NAVD88
The depth of the well is 129 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

- Carpar Tollings						
Table of data						
Tab-separated data						
Graph of data						
Reselect period						





Breaks in the plot represent a gap of at least one year between field measurements. <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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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: 2022-08-23 15:01:08 EDT

0.58 0.5 nadww02

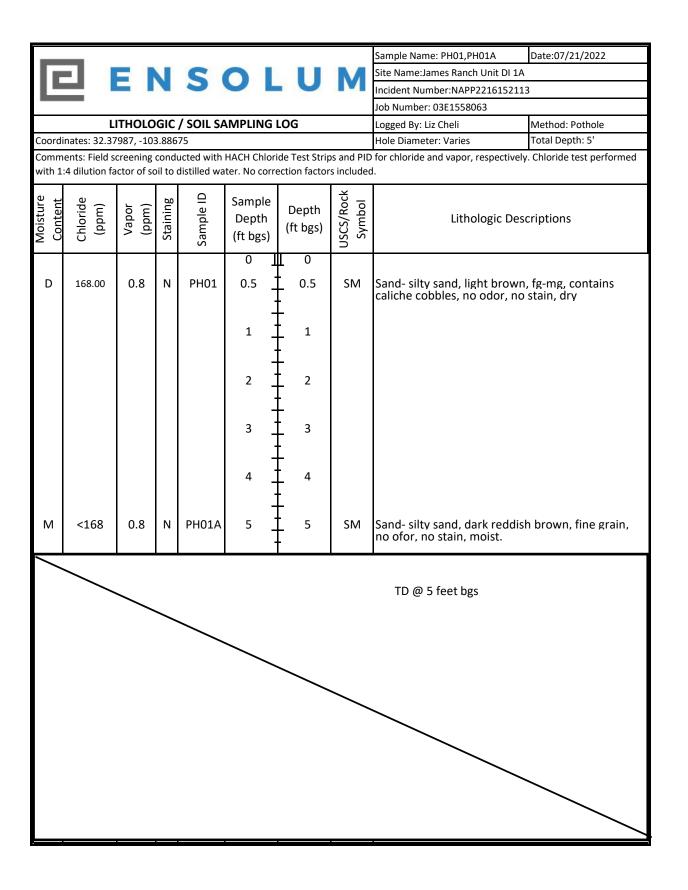


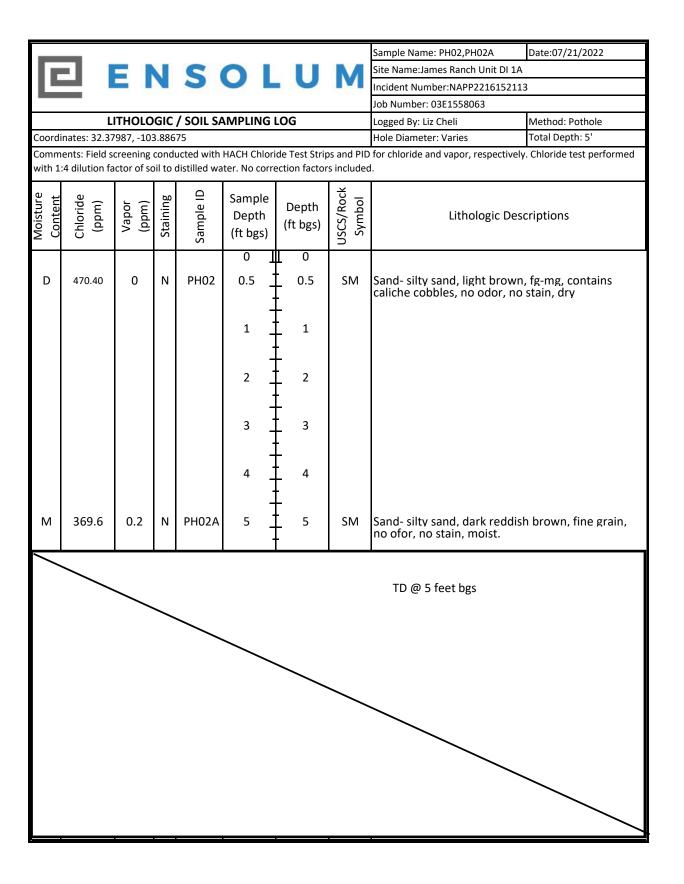


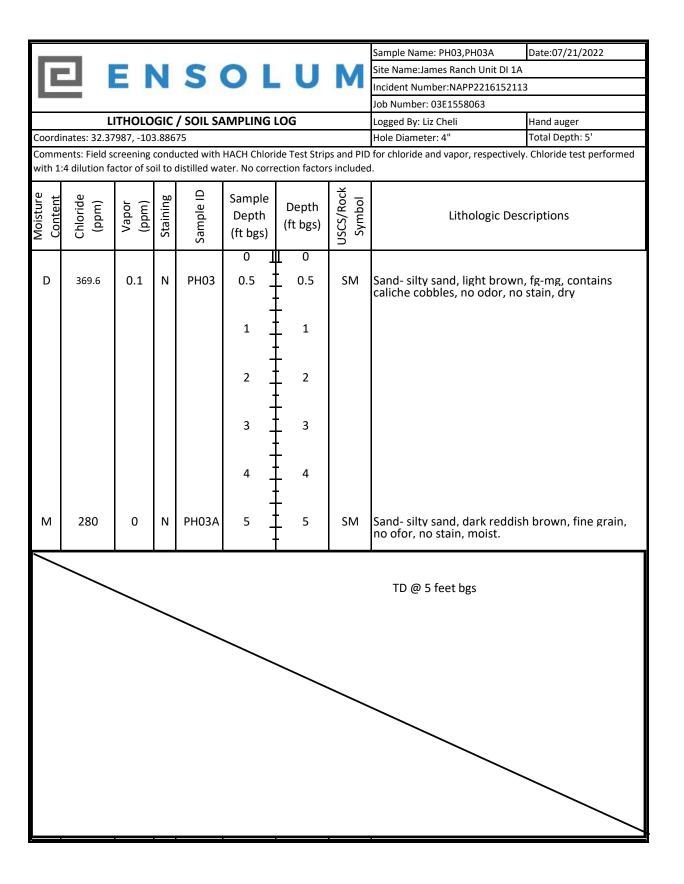
APPENDIX B

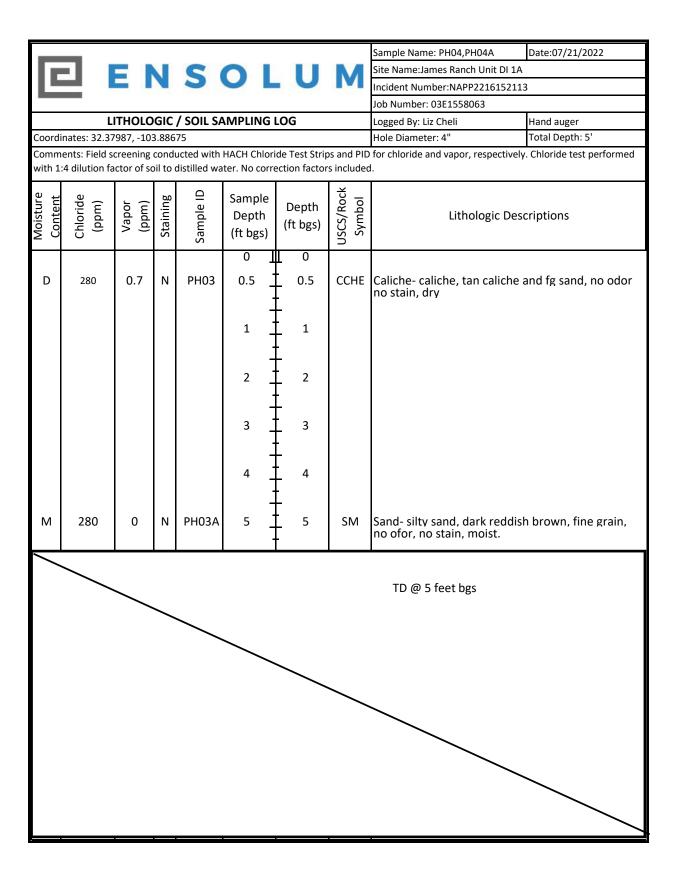
Lithologic Soil Sampling Logs

6.2								Sample Name: BH01,BH01A,BH01B	Date:06/14/2022
						Site Name:James Ranch Unit DI 1A	, ,		
115	ENSOLUM						Incident Number:NAPP2216152113		
							Job Number: 03E1558063		
						Logged By: Liz Cheli	Hand auger		
·						Hole Diameter: 4"	Total Depth: 6'		
Comm	ents: Field so	creening	cond	ucted with	HACH Chlori	ide Test Strip	s and PID	for chloride and vapor, respectively. (Chloride test performed
with 1	:4 dilution fa	ctor of so	oil to	distilled wa	ter. No corr	ection factor	s included	i.	
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Desc	riptions
					0 _	_ 0			
D	13,614	0.4	N		0.5	0.5 	CCHE	Caliche- caliche, tan caliche an no stain, dry	d fg sand, no odor
D	11,468.80	0	N	BH01	1	1		SAA	
D	369.6	0	N		2	_ _ _ _ _		SAA	
D	873.6	0.1	N		3	3 3		SAA	
D	1,036	0.3	N		4	4 4	SM	Sand- silty sand, dark reddish l no ofor, no stain, moist.	brown, fine grain,
D	8.008	0	N	BH01A	5 <u>-</u> 5 <u>-</u>	5 5		SAA	
D	476	0.1	N	BH01B	6	_ _ _ 6		SAA	
	TD @ 6 feet bgs								











APPENDIX C

Photographic Log

ENSOLUM

Photographic Log

XTO Energy, Inc.

James Ranch Unit DI 1A

NAPP2216152113





Photograph 1 Date:05/31/2022

Description: View of damage to the liner due to the fire, facing north

Photograph 2 Date:06/14/2022

Description: View of tank containment during site assessment, facing northeast





Photograph 3 Date:06/14/2022

Description: Location of BH01 within the containment, facing east

Photograph 4 Date:07/21/2022

Description: View of repaired containment following lateral delineation, facing southeast



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2417-1

Laboratory Sample Delivery Group: 03E1558063

Client Project/Site: JRUD1 1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

RAMER

Authorized for release by: 6/22/2022 12:08:25 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

------ LINKS ------

Review your project results through EOL

Have a Question?



Visit us at:

www.eurofinsus.com/Env Released to Imaging: 11/30/2022 3:43:27 PM

Environment Testing

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: JRUD1 1
Laboratory Job ID: 890-2417-1
SDG: 03E1558063

Table of Contents

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QC Sample Results	9
QC Association Summary	13
Lab Chronicle	15
Certification Summary	16
Method Summary	17
Sample Summary	18
Chain of Custody	19
Receipt Checklists	20

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Definitions/Glossary

 Client: Ensolum
 Job ID: 890-2417-1

 Project/Site: JRUD1 1
 SDG: 03E1558063

Qualifiers

GC VOA

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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.

HPLC/IC

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

Glossary

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

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

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

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

Eurofins Carlsbad

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Case Narrative

Client: Ensolum Job ID: 890-2417-1 SDG: 03E1558063 Project/Site: JRUD1 1

Job ID: 890-2417-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2417-1

Receipt

The samples were received on 6/15/2022 12:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.0°C

GC VOA

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

GC Semi VOA

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

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

Eurofins Carlsbad 6/22/2022

Matrix: Solid

Lab Sample ID: 890-2417-1

Client Sample Results

 Client: Ensolum
 Job ID: 890-2417-1

 Project/Site: JRUD1 1
 SDG: 03E1558063

Client Sample ID: BH01

Date Collected: 06/14/22 15:18 Date Received: 06/15/22 12:26

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 13:23	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 13:23	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 13:23	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		06/17/22 16:16	06/20/22 13:23	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 13:23	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		06/17/22 16:16	06/20/22 13:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130			06/17/22 16:16	06/20/22 13:23	1
1,4-Difluorobenzene (Surr)	90		70 - 130			06/17/22 16:16	06/20/22 13:23	1
Method: Total BTEX - Total BT	TEX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			06/21/22 10:44	1
Total TPH	114		50.0	mg/Kg			06/17/22 09:14	1
Total TPH	114		50.0	mg/Kg			06/17/22 09:14	1
Method: 8015B NM - Diesel Ra								
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	50.0	mg/Kg		06/16/22 08:31	06/16/22 17:04	1
Diesel Range Organics (Over C10-C28)	60.2		50.0	mg/Kg		06/16/22 08:31	06/16/22 17:04	1
Oll Range Organics (Over C28-C36)	53.4		50.0	mg/Kg		06/16/22 08:31	06/16/22 17:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130			06/16/22 08:31	06/16/22 17:04	1
o-Terphenyl	92		70 - 130			06/16/22 08:31	06/16/22 17:04	1
Method: 300.0 - Anions, Ion C	hromatography -	Soluble						
Method: 300.0 - Anions, Ion C Analyte		Soluble Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: BH01A

Date Collected: 06/14/22 17:10

Lab Sample ID: 890-2417-2

Matrix: Solid

Date Collected: 06/14/22 17:10 Date Received: 06/15/22 12:26

Sample Depth: 5

Method: 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 13:49	1	
Toluene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 13:49	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 13:49	1	
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		06/17/22 16:16	06/20/22 13:49	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 13:49	1	
Xylenes, Total	< 0.00399	U	0.00399	mg/Kg		06/17/22 16:16	06/20/22 13:49	1	

Eurofins Carlsbad

3

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12

1 /

Job ID: 890-2417-1

Client: Ensolum Project/Site: JRUD1 1 SDG: 03E1558063

Client Sample ID: BH01A Lab Sample ID: 890-2417-2

Date Collected: 06/14/22 17:10 Matrix: Solid Date Received: 06/15/22 12:26

Sample Depth: 5

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		70 - 130			06/17/22 16:16	06/20/22 13:49	
1,4-Difluorobenzene (Surr)	88		70 - 130			06/17/22 16:16	06/20/22 13:49	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			06/21/22 10:44	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			06/17/22 09:14	1
Gasoline Range Organics	<50.0		50.0		— <u> </u>	06/16/22 08:31		
Method: 8015B NM - Diesel Rang Analyte	• • •	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
				mg/Kg		00/10/22 00.31	06/16/22 17:25	1
,	<50.0	U					06/16/22 17:25	1
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		06/16/22 08:31		1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<50.0 <50.0							1 1
Diesel Range Organics (Over C10-C28)		U	50.0	mg/Kg		06/16/22 08:31	06/16/22 17:25	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<50.0	U	50.0 50.0	mg/Kg		06/16/22 08:31 06/16/22 08:31	06/16/22 17:25 06/16/22 17:25	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<50.0	U	50.0 50.0 <i>Limits</i>	mg/Kg		06/16/22 08:31 06/16/22 08:31 Prepared	06/16/22 17:25 06/16/22 17:25 Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	<50.0 **Recovery 103 107	U Qualifier	50.0 50.0 <u>Limits</u> 70 - 130	mg/Kg		06/16/22 08:31 06/16/22 08:31 Prepared 06/16/22 08:31	06/16/22 17:25 06/16/22 17:25 Analyzed 06/16/22 17:25	Dil Fac

Client Sample ID: BH01B Lab Sample ID: 890-2417-3 Matrix: Solid

24.9

mg/Kg

635

Date Collected: 06/14/22 17:30 Date Received: 06/15/22 12:26

Released to Imaging: 11/30/2022 3:43:27 PM

Sample Depth: 6

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		06/17/22 16:16	06/20/22 14:16	1
Toluene	<0.00199	U	0.00199	mg/Kg		06/17/22 16:16	06/20/22 14:16	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		06/17/22 16:16	06/20/22 14:16	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		06/17/22 16:16	06/20/22 14:16	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		06/17/22 16:16	06/20/22 14:16	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		06/17/22 16:16	06/20/22 14:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130			06/17/22 16:16	06/20/22 14:16	1
1,4-Difluorobenzene (Surr)	86		70 - 130			06/17/22 16:16	06/20/22 14:16	1
Method: Total BTEX - Total BT	EX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			06/21/22 10:44	1
Method: 8015 NM - Diesel Rar	ige Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

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06/22/22 06:29

Matrix: Solid

Lab Sample ID: 890-2417-3

Client Sample Results

 Client: Ensolum
 Job ID: 890-2417-1

 Project/Site: JRUD1 1
 SDG: 03E1558063

Client Sample ID: BH01B

Date Collected: 06/14/22 17:30 Date Received: 06/15/22 12:26

Sample Depth: 6

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U *1	50.0	mg/Kg		06/16/22 08:31	06/16/22 17:47	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		06/16/22 08:31	06/16/22 17:47	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/16/22 08:31	06/16/22 17:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130			06/16/22 08:31	06/16/22 17:47	1
o-Terphenyl	91		70 - 130			06/16/22 08:31	06/16/22 17:47	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
			24.8	mg/Kg			06/22/22 06:38	5

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Surrogate Summary

Job ID: 890-2417-1 Client: Ensolum Project/Site: JRUD1 1 SDG: 03E1558063

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2417-1	BH01	117	90	
890-2417-1 MS	BH01	113	99	
890-2417-1 MSD	BH01	121	102	
890-2417-2	BH01A	119	88	
890-2417-3	BH01B	115	86	
LCS 880-27836/1-A	Lab Control Sample	113	104	
LCSD 880-27836/2-A	Lab Control Sample Dup	115	90	
MB 880-27836/5-A	Method Blank	93	89	

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-15959-A-5-D MS	Matrix Spike	82	77	
880-15959-A-5-E MSD	Matrix Spike Duplicate	82	78	
890-2417-1	BH01	88	92	
890-2417-2	BH01A	103	107	
890-2417-3	BH01B	87	91	
LCS 880-27655/2-A	Lab Control Sample	94	96	
LCSD 880-27655/3-A	Lab Control Sample Dup	88	90	
MB 880-27655/1-A	Method Blank	84	95	

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2417-1 SDG: 03E1558063 Project/Site: JRUD1 1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-27836/5-A

Matrix: Solid Analysis Batch: 27881 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 27836

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 12:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 12:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 12:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/17/22 16:16	06/20/22 12:57	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/17/22 16:16	06/20/22 12:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		06/17/22 16:16	06/20/22 12:57	1

MB MB

MD MD

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93	70 - 130	06/17/22 16:16	06/20/22 12:57	1
1,4-Difluorobenzene (Surr)	89	70 - 130	06/17/22 16:16	06/20/22 12:57	1

Lab Sample ID: LCS 880-27836/1-A

Matrix: Solid

Analysis Batch: 27881

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 27836

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1013 mg/Kg 101 70 - 130 Toluene 0.100 0.1006 mg/Kg 101 70 - 130 0.100 0.1056 106 Ethylbenzene mg/Kg 70 - 130 0.200 0.2125 106 70 - 130 m-Xylene & p-Xylene mg/Kg 0.100 70 - 130 o-Xylene 0.1041 mg/Kg 104

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: LCSD 880-27836/2-A

Matrix: Solid

Analysis Batch: 27881

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 27836

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.1040		mg/Kg		104	70 - 130	3	35	
Toluene	0.100	0.1061		mg/Kg		106	70 - 130	5	35	
Ethylbenzene	0.100	0.1136		mg/Kg		114	70 - 130	7	35	
m-Xylene & p-Xylene	0.200	0.2260		mg/Kg		113	70 - 130	6	35	
o-Xylene	0.100	0.1086		mg/Kg		109	70 - 130	4	35	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	115		70 - 130
1.4-Difluorobenzene (Surr)	90		70 ₋ 130

Lab Sample ID: 890-2417-1 MS

Matrix: Solid

Analysis Batch: 27881

Client Sample ID: BH01 Prep Type: Total/NA

Prep Batch: 27836

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U	0.0998	0.09243		mg/Kg		93	70 - 130	
Toluene	<0.00200	U	0.0998	0.08591		mg/Kg		86	70 - 130	

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Job ID: 890-2417-1 Client: Ensolum Project/Site: JRUD1 1 SDG: 03E1558063

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

Lab Sample ID: 890-2417-1 MS **Matrix: Solid**

Analysis Batch: 27881

Client Sample ID: BH01 Prep Type: Total/NA

Prep Batch: 27836

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits D 0.0998 Ethylbenzene <0.00200 U 0.08975 90 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00401 0.200 0.1812 mg/Kg 91 70 - 130 o-Xylene <0.00200 U 0.0998 0.08365 84 70 - 130 mg/Kg

MS MS

Surrogate	%Recovery Qu	ualifier Limits
4-Bromofluorobenzene (Surr)	113	70 - 130
1,4-Difluorobenzene (Surr)	99	70 - 130

Client Sample ID: BH01 Prep Type: Total/NA

Analysis Batch: 27881

Matrix: Solid

Lab Sample ID: 890-2417-1 MSD

Prep Batch: 27836 RPD

Sample Sample Spike MSD MSD %Rec Result Qualifier RPD Limit Analyte babbA Result Qualifier Unit Limits Benzene <0.00200 U 0.0994 0.09126 mg/Kg 92 70 - 130 35 Toluene <0.00200 U 0.0994 0.08025 mg/Kg 81 70 - 130 Ethylbenzene <0.00200 U 0.0994 0.08340 84 70 - 130 mg/Kg 0.199 m-Xylene & p-Xylene <0.00401 U 0.1645 mg/Kg 83 70 - 130 10 0.0994 <0.00200 U 0.07624 77 70 - 130 o-Xylene mg/Kg

35 35 35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

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

Lab Sample ID: MB 880-27655/1-A

Matrix: Solid

Analysis Batch: 27649

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

Prep Batch: 27655

мв мв Result Qualifier RL Unit D Prepared Analyzed Dil Fac Analyte Gasoline Range Organics 50.0 06/16/22 08:31 06/16/22 10:25 <50.0 U mg/Kg (GRO)-C6-C10 06/16/22 08:31 06/16/22 10:25 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg C10-C28) OII Range Organics (Over C28-C36) <50.0 U 50.0 06/16/22 08:31 06/16/22 10:25 mg/Kg

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	84		70 - 130	06/16/22 08:31	06/16/22 10:25	1
o-Terphenyl	95		70 - 130	06/16/22 08:31	06/16/22 10:25	1

Lab Sample ID: LCS 880-27655/2-A

Matrix: Solid

Analysis Batch: 27649

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

Prep Batch: 27655

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	1000	1101		mg/Kg		110	70 - 130
(GRO)-C6-C10							
Diesel Range Organics (Over	1000	974.5		mg/Kg		97	70 - 130
C10-C28)							

Job ID: 890-2417-1

SDG: 03E1558063

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

Lab Sample ID: LCS 880-27655/2-A

Matrix: Solid

Client: Ensolum Project/Site: JRUD1 1

Analysis Batch: 27649

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 27655

LCS LCS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 94 70 - 130 o-Terphenyl 96 70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Batch: 27655

Lab Sample ID: LCSD 880-27655/3-A **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 27649

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 1000 837.8 *1 84 70 - 13027 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 93 927.3 mg/Kg 70 - 1305 20 C10-C28)

LCSD LCSD

Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 88 70 - 130 o-Terphenyl 90

Lab Sample ID: 880-15959-A-5-D MS Client Sample ID: Matrix Spike

Matrix: Solid

Analysis Batch: 27649

Prep Type: Total/NA

Prep Batch: 27655

Sample Sample MS MS Spike Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <49.9 U *1 998 791.6 mg/Kg 75 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 UF1 998 707.8 F1 mg/Kg 69 70 - 130

C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 82 o-Terphenyl 77 70 - 130

Lab Sample ID: 880-15959-A-5-E MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Solid

Analysis Batch: 27649

Prep Type: Total/NA

Prep Batch: 27655

Sample Sample MSD MSD RPD Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit U *1 999 786.2 Gasoline Range Organics <49.9 mg/Kg 74 70 - 130 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 UF1 999 723.6 mg/Kg 70 70 - 130 2 20 C10-C28)

MSD MSD

%Recovery Qualifier Surrogate Limits 1-Chlorooctane 82 70 - 130 78 70 - 130 o-Terphenyl

Job ID: 890-2417-1 Client: Ensolum Project/Site: JRUD1 1

SDG: 03E1558063

Client Sample ID: Method Blank

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-27812/1-A

Matrix: Solid

Analysis Batch: 28044

Prep Type: Soluble MB MB

Dil Fac Analyte Result Qualifier RL Unit D Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 06/22/22 02:11

Lab Sample ID: LCS 880-27812/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 28044

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

Lab Sample ID: LCSD 880-27812/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 28044

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 265.9 mg/Kg 106 90 - 110

Lab Sample ID: 890-2416-A-1-D MS Client Sample ID: Matrix Spike **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 28044

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added %Rec Result Qualifier Unit Limits 1250 Chloride 400 1644 90 - 110 mg/Kg

Lab Sample ID: 890-2416-A-1-E MSD Client Sample ID: Matrix Spike Duplicate **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 28044

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit 1250 Chloride 400 1638 mg/Kg 99 90 - 110 20

QC Association Summary

 Client: Ensolum
 Job ID: 890-2417-1

 Project/Site: JRUD1 1
 SDG: 03E1558063

GC VOA

Prep Batch: 27836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2417-1	BH01	Total/NA	Solid	5035	
890-2417-2	BH01A	Total/NA	Solid	5035	
890-2417-3	BH01B	Total/NA	Solid	5035	
MB 880-27836/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-27836/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-27836/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2417-1 MS	BH01	Total/NA	Solid	5035	
890-2417-1 MSD	BH01	Total/NA	Solid	5035	

Analysis Batch: 27881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2417-1	BH01	Total/NA	Solid	8021B	27836
890-2417-2	BH01A	Total/NA	Solid	8021B	27836
890-2417-3	BH01B	Total/NA	Solid	8021B	27836
MB 880-27836/5-A	Method Blank	Total/NA	Solid	8021B	27836
LCS 880-27836/1-A	Lab Control Sample	Total/NA	Solid	8021B	27836
LCSD 880-27836/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	27836
890-2417-1 MS	BH01	Total/NA	Solid	8021B	27836
890-2417-1 MSD	BH01	Total/NA	Solid	8021B	27836

Analysis Batch: 28035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2417-1	BH01	Total/NA	Solid	Total BTEX	
890-2417-2	BH01A	Total/NA	Solid	Total BTEX	
890-2417-3	BH01B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 27649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2417-1	BH01	Total/NA	Solid	8015B NM	27655
890-2417-2	BH01A	Total/NA	Solid	8015B NM	27655
890-2417-3	BH01B	Total/NA	Solid	8015B NM	27655
MB 880-27655/1-A	Method Blank	Total/NA	Solid	8015B NM	27655
LCS 880-27655/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	27655
LCSD 880-27655/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	27655
880-15959-A-5-D MS	Matrix Spike	Total/NA	Solid	8015B NM	27655
880-15959-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	27655

Prep Batch: 27655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2417-1	BH01	Total/NA	Solid	8015NM Prep	
890-2417-2	BH01A	Total/NA	Solid	8015NM Prep	
890-2417-3	BH01B	Total/NA	Solid	8015NM Prep	
MB 880-27655/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-27655/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-27655/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-15959-A-5-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-15959-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

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QC Association Summary

 Client: Ensolum
 Job ID: 890-2417-1

 Project/Site: JRUD1 1
 SDG: 03E1558063

GC Semi VOA

Analysis Batch: 27766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2417-1	BH01	Total/NA	Solid	8015 NM	
890-2417-2	BH01A	Total/NA	Solid	8015 NM	
890-2417-3	BH01B	Total/NA	Solid	8015 NM	
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Leach Batch: 27812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2417-1	BH01	Soluble	Solid	DI Leach	
890-2417-2	BH01A	Soluble	Solid	DI Leach	
890-2417-3	BH01B	Soluble	Solid	DI Leach	
MB 880-27812/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-27812/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-27812/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2416-A-1-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2416-A-1-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 28044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2417-1	BH01	Soluble	Solid	300.0	27812
890-2417-2	BH01A	Soluble	Solid	300.0	27812
890-2417-3	BH01B	Soluble	Solid	300.0	27812
MB 880-27812/1-A	Method Blank	Soluble	Solid	300.0	27812
LCS 880-27812/2-A	Lab Control Sample	Soluble	Solid	300.0	27812
LCSD 880-27812/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	27812
890-2416-A-1-D MS	Matrix Spike	Soluble	Solid	300.0	27812
890-2416-A-1-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	27812

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Client: Ensolum Job ID: 890-2417-1 Project/Site: JRUD1 1 SDG: 03E1558063

Client Sample ID: BH01 Lab Sample ID: 890-2417-1 Date Collected: 06/14/22 15:18

Matrix: Solid Date Received: 06/15/22 12:26

	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	27836	06/17/22 16:16	MR	XEN MID
Total/NA	Analysis	8021B		1			27881	06/20/22 13:23	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28035	06/21/22 10:44	SM	XEN MID
Total/NA	Analysis	8015 NM		1			27766	06/17/22 09:14	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	27655	06/16/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27649	06/16/22 17:04	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	27812	06/17/22 11:57	SC	XEN MID
Soluble	Analysis	300.0		10			28044	06/22/22 06:20	CH	XEN MID

Client Sample ID: BH01A Lab Sample ID: 890-2417-2 Date Collected: 06/14/22 17:10 Matrix: Solid

Date Received: 06/15/22 12:26

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	27836	06/17/22 16:16	MR	XEN MID
Total/NA	Analysis	8021B		1			27881	06/20/22 13:49	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28035	06/21/22 10:44	SM	XEN MID
Total/NA	Analysis	8015 NM		1			27766	06/17/22 09:14	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	27655	06/16/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27649	06/16/22 17:25	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	27812	06/17/22 11:57	SC	XEN MID
Soluble	Analysis	300.0		5			28044	06/22/22 06:29	CH	XEN MID

Client Sample ID: BH01B Lab Sample ID: 890-2417-3 Date Collected: 06/14/22 17:30 **Matrix: Solid**

Date Received: 06/15/22 12:26

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	27836	06/17/22 16:16	MR	XEN MID
Total/NA	Analysis	8021B		1			27881	06/20/22 14:16	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28035	06/21/22 10:44	SM	XEN MID
Total/NA	Analysis	8015 NM		1			27766	06/17/22 09:14	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	27655	06/16/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27649	06/16/22 17:47	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	27812	06/17/22 11:57	SC	XEN MID
Soluble	Analysis	300.0		5			28044	06/22/22 06:38	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

 Client: Ensolum
 Job ID: 890-2417-1

 Project/Site: JRUD1 1
 SDG: 03E1558063

Laboratory: Eurofins Midland

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

Authority		ogram	Identification Number	Expiration Date
Texas	NE	ELAP	T104704400-21-22	06-30-22
The following analytes	are included in this report by	it the laboratory is not cortifi	iad butba gavarning autharity. This list ma	
the agency does not of	• •	it the laboratory is not certifi	ied by the governing authority. This list ma	ay include analytes for v
,	• •	Matrix	Analyte	ay include analytes for v
the agency does not of	fer certification.	•	, , ,	ay include analytes for v

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Method Summary

 Client: Ensolum
 Job ID: 890-2417-1

 Project/Site: JRUD1 1
 SDG: 03E1558063

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

Protocol References:

ASTM = ASTM International

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Eurofins Carlsbad

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Sample Summary

Client: Ensolum Project/Site: JRUD1 1 Job ID: 890-2417-1

SDG: 03E1558063

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	
890-2417-1	BH01	Solid	06/14/22 15:18	06/15/22 12:26	0
890-2417-2	BH01A	Solid	06/14/22 17:10	06/15/22 12:26	5
890-2417-3	BH01B	Solid	06/14/22 17:30	06/15/22 12:26	6

Work Order No:

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334

Environment Testing

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Xenco

Chain of Custody

EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

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Page of I	elds RRC Superfund		ST] Other:	Preservative Codes	None: NO DI Water: H ₂ O	70	HCL: HC HNO 3: HN		NaHSO ;: NABIS	Na ₂ S ₂ O ₃ : NaSO ₃	Zn Acetate+NaOH: Zn	NaOH+Ascorbic Acid: SAPC	Sample Comments	BHOIC ON	holon		4010			Sn U V Zn 170 / 7471		Date/Time			ביניסר פיניסר איניסר איניס
www.xenco.com Page Work Order Comments	ım: UST/PST ☐ PRP☐ Brownfields ☐		evel Level	Deliverables: EDD		No	Š	OH I	H	e N	Na	Zn	Nac								o Ni K Se Ag SiO ₂ Na Sr Tl Sn U V I U Hg: 1631/245.1/7470/74	itions ntrol negotlated.	Received by: (Signature)			
	Program:	State	Repor		ANALYSIS REQUEST		The state of the s			890-2417 Chain of Custody	(non-										b As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	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 seave. 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 seave. Eurofins Xenco, will pelable 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 seasons and any control of such any seasons and seasons are seasons and control of seasons are seasons.	Relinquished by: (Signature)	2	4	9
				say Gensolum Com		Pres. Code	(00	E D	(21)	205	3)	t	BH Lb+ Cuk	× × -			<i>> > ></i>				to Eurofins Xenco, its affiliates and s r expenses incurred by the client if s ted to Eurofins Xenco, but not analy,	Date/Time	(6.15.221.23)		
Bill to; (if different)		Address:	20 City, State ZIP:	Email: tmomsscu	Turn Around	Routine Rush	Due Date:	TAT starts the day received by	Wet Ice: Yes No	TO IN	tor. Co.O.	121	perature: 5 0	Time Depth Grab/	0.5	710 5 1	1130 6	1135 7 1			13PPM Texas 11 LP / SPLP 6010 : 8R0	d purchase order from client company ume any responsibility for any losses o a charge of \$5 for each sample submit	(Signature)	0		
oma Momssey		Nati Parks Hust	MM	L088 L5	1	58063	Canhy, NM		Temp Blank: (Ses) No	Thermometer	Yes No / N/A Correction Factor:	Yes No N/ Temperature Reading:	Corrected Temperature:	Matrix Date	2	-		<u>-</u>			200.8 / 6020: 8RCRA tal(s) to be analyzed TC	juishment of samples constitutes a valing or the cost of samples and shall not ass 00 will be applied to each project and	Received by (Signature)	90)		
Project Manager:	Ens		te ZIP: Carl		Project Name: JAUO	Project Number: 03E15	Project Location: Edd W	er's Name:	CAMPI F RECEIPT	tact:	Cooler Custody Seals: Yes	Sample Custody Seals: Yes	Total Containers:	Sample Identification	PHOL	RHOIA	810HB	BHOIC			Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any respons of service. Eurofins Xenco. A minimum change of \$85.00 will be applied to each project and a charge of \$5 for	Relinquished by: (Signature)	Int	3	S

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-2417-1 SDG Number: 03E1558063

Login Number: 2417 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: 890-2417-1 SDG Number: 03E1558063

List Source: Eurofins Midland

List Number: 2 Creator: Rodriguez, Leticia

Login Number: 2417

List Creation: 06/16/22 11:11 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	



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2621-1

Laboratory Sample Delivery Group: 03E1558063

Client Project/Site: JRU D1 1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

RAMER

7/31/2022 10:18:15 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Authorized for release by:

Review your project results through EOL **Have a Question?**

------ LINKS ------

Visit us at:

www.eurofinsus.com/Env Released to Imaging: 11/30/2022 3:43:27 PM

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

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

Client: Ensolum
Project/Site: JRU D1 1
Laboratory Job ID: 890-2621-1
SDG: 03E1558063

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Definitions/Glossary

 Client: Ensolum
 Job ID: 890-2621-1

 Project/Site: JRU D1 1
 SDG: 03E1558063

Qualifiers

GC VOA

 Qualifier
 Qualifier Description

 F1
 MS and/or MSD recovery exceeds control limits.

 S1+
 Surrogate recovery exceeds control limits, high biased.

 U
 Indicates the analyte was analyzed for but not detected.

GC Semi VOA

F1 MS and/or MSD recovery exceeds control limits.
F2 MS/MSD RPD exceeds control limits
S1- Surrogate recovery exceeds control limits, low biased.

Qualifier Description

HPLC/IC

U

Qualifier

Qualifier Description

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

Glossary

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

Indicates the analyte was analyzed for but not detected.

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

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

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

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Case Narrative

 Client: Ensolum
 Job ID: 890-2621-1

 Project/Site: JRU D1 1
 SDG: 03E1558063

Job ID: 890-2621-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2621-1

Receipt

The samples were received on 7/21/2022 4:36 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 13.8°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30893 and analytical batch 880-31046 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-2618-A-1-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30666 and analytical batch 880-30643 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30600 and analytical batch 880-30692 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-30602 and 880-30602 and analytical batch 880-30920 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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Matrix: Solid

Lab Sample ID: 890-2621-1

Client Sample Results

 Client: Ensolum
 Job ID: 890-2621-1

 Project/Site: JRU D1 1
 SDG: 03E1558063

Client Sample ID: PH01 @ 0.5'

Date Collected: 07/21/22 10:14 Date Received: 07/21/22 16:36

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		07/28/22 09:46	07/31/22 01:18	1
Toluene	<0.00199	U	0.00199	mg/Kg		07/28/22 09:46	07/31/22 01:18	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		07/28/22 09:46	07/31/22 01:18	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		07/28/22 09:46	07/31/22 01:18	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		07/28/22 09:46	07/31/22 01:18	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		07/28/22 09:46	07/31/22 01:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130			07/28/22 09:46	07/31/22 01:18	1
1,4-Difluorobenzene (Surr)	97		70 - 130			07/28/22 09:46	07/31/22 01:18	1
Method: Total BTEX - Total BTE	(Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/31/22 09:18	1
Method: 8015 NM - Diesel Range Analyte		O) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/27/22 10:58	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	<49.9	U	49.9	mg/Kg		07/26/22 10:41	07/27/22 00:24	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/26/22 10:41	07/27/22 00:24	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/26/22 10:41	07/27/22 00:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	70		70 - 130			07/26/22 10:41	07/27/22 00:24	1
o-Terphenyl	76		70 - 130			07/26/22 10:41	07/27/22 00:24	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Method: 300.0 - Anions, Ion Chro		Soluble Qualifier	RL 4.95	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: PH01 @ 5'

Date Collected: 07/21/22 10:20

Date Received: 07/21/22 16:36

Sample Depth: 5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		07/28/22 09:46	07/31/22 01:38	1
Toluene	<0.00199	U	0.00199	mg/Kg		07/28/22 09:46	07/31/22 01:38	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		07/28/22 09:46	07/31/22 01:38	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		07/28/22 09:46	07/31/22 01:38	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		07/28/22 09:46	07/31/22 01:38	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		07/28/22 09:46	07/31/22 01:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	324	S1+	70 - 130			07/28/22 09:46	07/31/22 01:38	1

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Lab Sample ID: 890-2621-2

Matrix: Solid

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Matrix: Solid

Lab Sample ID: 890-2621-2

Client Sample Results

Client: Ensolum Job ID: 890-2621-1 Project/Site: JRU D1 1 SDG: 03E1558063

Client Sample ID: PH01 @ 5'

Date Collected: 07/21/22 10:20 Date Received: 07/21/22 16:36

Sample Depth: 5'

Analyte

Chloride

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	244	S1+	70 - 130			07/28/22 09:46	07/31/22 01:38	1
Method: Total BTEX - Total BTE	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/31/22 09:18	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/27/22 10:58	1
Mothod: 9045P NM Discol Pone	no Organico (Di	30) (CC)						
Mathed 0045D NM Discal Dans	O	20) (00)						
Method: 8015B NM - Diesel Rang Analyte	Result	Qualifier	RL	Unit ma/Ka	<u>D</u>	Prepared 07/26/22 10:41	Analyzed 07/27/22 00:46	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10		Qualifier U	49.9	mg/Kg	<u>D</u>	07/26/22 10:41	07/27/22 00:46	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result	Qualifier U			<u>D</u>	<u>·</u>		Dil Fac
Analyte Gasoline Range Organics		Qualifier U	49.9	mg/Kg	<u> </u>	07/26/22 10:41	07/27/22 00:46	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <49.9 <49.9	Qualifier U U U	49.9	mg/Kg	<u>D</u>	07/26/22 10:41	07/27/22 00:46 07/27/22 00:46	Dil Fac
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> </u>	07/26/22 10:41 07/26/22 10:41 07/26/22 10:41	07/27/22 00:46 07/27/22 00:46 07/27/22 00:46	

4.96

Unit

mg/Kg

D

Prepared

Analyzed

07/29/22 12:28

Result Qualifier

25.0

Eurofins Carlsbad

Dil Fac

Surrogate Summary

 Client: Ensolum
 Job ID: 890-2621-1

 Project/Site: JRU D1 1
 SDG: 03E1558063

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Rec
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-17457-A-4-B MS	Matrix Spike	97	85	
880-17457-A-4-C MSD	Matrix Spike Duplicate	90	83	
890-2621-1	PH01 @ 0.5'	124	97	
890-2621-2	PH01 @ 5'	324 S1+	244 S1+	
LCS 880-30893/1-A	Lab Control Sample	102	97	
LCSD 880-30893/2-A	Lab Control Sample Dup	102	99	
MB 880-30595/5-A	Method Blank	107	89	
MB 880-30893/5-A	Method Blank	98	90	

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 Limi
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2618-A-1-E MS	Matrix Spike	82	78	
890-2618-A-1-F MSD	Matrix Spike Duplicate	67 S1-	64 S1-	
890-2621-1	PH01 @ 0.5'	70	76	
890-2621-2	PH01 @ 5'	72	78	
LCS 880-30666/2-A	Lab Control Sample	90	92	
LCSD 880-30666/3-A	Lab Control Sample Dup	93	95	
MB 880-30666/1-A	Method Blank	100	108	

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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Client: Ensolum Job ID: 890-2621-1 SDG: 03E1558063 Project/Site: JRU D1 1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30595/5-A

Matrix: Solid Analysis Batch: 31046 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30595

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/25/22 14:01	07/30/22 11:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/25/22 14:01	07/30/22 11:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/25/22 14:01	07/30/22 11:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/25/22 14:01	07/30/22 11:57	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/25/22 14:01	07/30/22 11:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/25/22 14:01	07/30/22 11:57	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	07/25/22 14:	01 07/30/22 11:57	1
1,4-Difluorobenzene (Surr)	89		70 - 130	07/25/22 14:	01 07/30/22 11:57	1

Lab Sample ID: MB 880-30893/5-A

Matrix: Solid

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30893

Analysis Batch: 31046

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/28/22 09:46	07/30/22 22:33	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/28/22 09:46	07/30/22 22:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/28/22 09:46	07/30/22 22:33	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/28/22 09:46	07/30/22 22:33	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/28/22 09:46	07/30/22 22:33	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/28/22 09:46	07/30/22 22:33	1

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Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130	07/28/22 09:46	07/30/22 22:33	1
1,4-Difluorobenzene (Surr)	90		70 - 130	07/28/22 09:46	07/30/22 22:33	1

Lab Sample ID: LCS 880-30893/1-A

Matrix: Solid

Analysis Batch: 31046

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 30893

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.07636		mg/Kg		76	70 - 130	
Toluene	0.100	0.07525		mg/Kg		75	70 - 130	
Ethylbenzene	0.100	0.07655		mg/Kg		77	70 - 130	
m-Xylene & p-Xylene	0.200	0.1566		mg/Kg		78	70 - 130	
o-Xylene	0.100	0.08861		mg/Kg		89	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	102	70 - 130
1.4-Difluorobenzene (Surr)	97	70 - 130

Lab Sample ID: LCSD 880-30893/2-A

Matrix: Solid

Analysis Batch: 31046

Client Sample	ID: Lab C	ontrol S	Sample Dup	ρ
	_		T-4-1/NI	

Prep Type: Total/NA

Prep Batch: 30893

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08496	mg/Kg		85	70 - 130	11	35

QC Sample Results

Client: Ensolum Job ID: 890-2621-1 SDG: 03E1558063 Project/Site: JRU D1 1

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

Lab Sample ID: LCSD 880-30893/2-A

Matrix: Solid

Analysis Batch: 31046

Client Sample	ID: Lab	Control	Sample	Dup
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Prep Type: Total/NA Prep Batch: 30893

•	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Toluene	0.100	0.08283		mg/Kg		83	70 - 130	10	35
Ethylbenzene	0.100	0.08403		mg/Kg		84	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1660		mg/Kg		83	70 - 130	6	35
o-Xylene	0.100	0.09377		mg/Kg		94	70 - 130	6	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 880-17457-A-4-B MS Client Sample ID: Matrix Spike

•	0	0	140 140	0/ D
Analysis Batch: 31046				Prep Batch: 30893
Matrix: Solid				Prep Type: Total/NA

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Benzene <0.00201 U F1 0.0998 0.008077 F1 8 70 - 130 mg/Kg Toluene 0.00237 F1 0.0998 0.01293 F1 70 - 130 mg/Kg 11 Ethylbenzene 0.00203 F1 0.0998 0.01245 F1 mg/Kg 70 - 130 10 0.200 m-Xylene & p-Xylene 0.00684 F1 0.02690 F1 10 70 - 130 mg/Kg o-Xylene 0.00277 F1 0.0998 0.01677 F1 mg/Kg 70 - 130

MS MS

Surrogate	%Recovery Qualifier	Limits		
4-Bromofluorobenzene (Surr)	97	70 - 130		
1,4-Difluorobenzene (Surr)	85	70 - 130		

Lab Sample ID: 880-17457-A-4-C MSD

Matrix: Solid

Analysis Batch: 31046

Client Sample ID: Matrix Spike	Dunlicate

Prep Type: Total/NA Prep Batch: 30893

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00201	U F1	0.0994	0.01078	F1	mg/Kg		11	70 - 130	29	35
Toluene	0.00237	F1	0.0994	0.01290	F1	mg/Kg		11	70 - 130	0	35
Ethylbenzene	0.00203	F1	0.0994	0.01203	F1	mg/Kg		10	70 - 130	3	35
m-Xylene & p-Xylene	0.00684	F1	0.199	0.02672	F1	mg/Kg		10	70 - 130	1	35
o-Xylene	0.00277	F1	0.0994	0.01595	F1	mg/Kg		13	70 - 130	5	35

MSD MSD

Surroyale	76Recovery	Qualifier	LIIIIIS			
4-Bromofluorobenzene (Surr)	90		70 - 130			
1,4-Difluorobenzene (Surr)	83		70 - 130			

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

Lab Sample ID: MB 880-30666/1-A

Matrix: Solid

Analysis Batch: 30643

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

Prep Batch: 30666

ı		MB	MB						
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Gasoline Range Organics	<50.0	U	50.0	mg/Kg		07/26/22 10:41	07/26/22 20:25	1

(GRO)-C6-C10

 Client: Ensolum
 Job ID: 890-2621-1

 Project/Site: JRU D1 1
 SDG: 03E1558063

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

Lab Sample ID: MB 880-30666/1-A

Matrix: Solid

Analysis Batch: 30643

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30666

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/26/22 10:41	07/26/22 20:25	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/26/22 10:41	07/26/22 20:25	1
	МВ	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			07/26/22 10:41	07/26/22 20:25	1

o-Terphenyl	1	08 70) ₋ 130			07/2	26/22 10:4	1 07/26/22 20:2	5 1
Lab Sample ID: LCS 880-300	666/2-A					Client	Sample	e ID: Lab Contr	ol Sample
Matrix: Solid								Prep Type	: Total/NA
Analysis Batch: 30643								Prep Bat	tch: 30666
		Spike	LCS	LCS				%Rec	
Analyte		Added	l Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics		1000	1067		mg/Kg		107	70 - 130	
(GRO)-C6-C10									
Diesel Range Organics (Over		1000	914.2		mg/Kg		91	70 - 130	
C10-C28)									
	LCS L	cs							
Surrogate	%Recovery Q	Qualifier Limits							
1-Chlorooctane	90	70 - 130)						
o-Terphenyl	92	70 - 130)						

Lab Sample ID: LCSD 880-30666/3-A Matrix: Solid Analysis Batch: 30643				Clier	nt Sam	ple ID:		ol Sampl Type: To Batch:	tal/NA
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1056		mg/Kg		106	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	1000	902.3		mg/Kg		90	70 - 130	1	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	93		70 - 130
o-Terphenyl	95		70 - 130

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Lab Sample ID: 890-2618-A- Matrix: Solid Analysis Batch: 30643	-1-E MS					Client Sample ID: Matrix S Prep Type: Tot Prep Batch: 3				
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	1000	1169		mg/Kg		114	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U F1	1000	853.5		mg/Kg		84	70 - 130	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	82		70 _ 130							

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70 - 130

o-Terphenyl

Client: Ensolum Job ID: 890-2621-1 Project/Site: JRU D1 1

SDG: 03E1558063

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

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Lab Sample ID: 890-2618-A Matrix: Solid Analysis Batch: 30643	-1-F MSD					CI	ient Sa	ample IC	•	oike Dup Type: Tot Batch:	tal/NA
	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	<50.0	U F2	999	943.2	F2	mg/Kg		92	70 - 130	21	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	999	704.6	F1	mg/Kg		69	70 - 130	19	20
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	67	S1-	70 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 880-30600/3-A

Lab Sample ID: 880-17277-A-3-E MS

Lab Sample ID: 880-17277-A-3-F MSD

Matrix: Solid

o-Terphenyl

Lab Sample ID: MB 880-	·30600/1-A					Client Sa	ample ID: Metho	d Blank
Matrix: Solid							Prep Type:	Soluble
Analysis Batch: 30692								
	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/26/22 22:31	1
_								

70 - 130

Lab Sample ID: LCS 880-30600/2-A Matrix: Solid			Client Sample ID: Lab Control Sample Prep Type: Soluble
Analysis Batch: 30692	Spike	LCS LCS	%Rec

Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 254.9 mg/Kg 102 90 - 110		opike	L03	LUJ				/orvec
Chloride 250 254.9 mg/Kg 102 90 - 110	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
	Chloride	 250	254.9				102	90 - 110

Analysis Batch: 30692									
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	255.8		mg/Kg		102	90 - 110		20

Matrix: Solid									Prep Type: Soluble
Analysis Batch: 30692									
	Sample	Sample	Spike	MS	MS				%Rec
Amalusta	Desuit	Ovalifian	A alala al	Decula	Ouglifien	I Imia	ь.	0/ Dag	Limite

	Gampic	Odinpic	Opino	1410	1110				/01100	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	22.5	F1	252	299.6		mg/Kg		110	90 - 110	

Matrix: Solid Analysis Batch: 30692									Prep	Type: So	oluble
Analysis Batom 60002	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	22.5	F1	252	302.1	F1	mg/Kg		111	90 - 110	1	20

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Client Sample ID: Lab Control Sample Dup

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Client Sample ID: Matrix Spike

Job ID: 890-2621-1 Client: Ensolum Project/Site: JRU D1 1

SDG: 03E1558063

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-30602/1-A Client Sample ID: Method Blank **Matrix: Solid**

Prep Type: Soluble

Analysis Batch: 30920

Analyte

Chloride

MB MB Result Qualifier RLUnit D Prepared Analyzed Dil Fac <5.00 U 5.00 mg/Kg 07/29/22 10:35

Lab Sample ID: LCS 880-30602/2-A Client Sample ID: Lab Control Sample **Matrix: Solid**

Prep Type: Soluble

Analysis Batch: 30920

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 261.1 mg/Kg 104 90 - 110

Lab Sample ID: LCSD 880-30602/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 30920

Spike LCSD LCSD RPD %Rec Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 261.9 mg/Kg 105 90 - 110

Lab Sample ID: 880-17266-A-41-B MS Client Sample ID: Matrix Spike **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 30920

Sample Sample MS MS Spike %Rec Result Qualifier Result Qualifier Added Analyte Unit %Rec Limits Chloride 1680 1250 3104 F1 114 90 - 110 mg/Kg

Lab Sample ID: 880-17266-A-41-C MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 30920

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit 1680 F1 1250 Chloride 2993 mg/Kg 105 90 - 110 20

Lab Sample ID: 880-17282-A-1-E MS Client Sample ID: Matrix Spike **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 30920

Sample Spike MS MS %Rec Sample Result Qualifier Added Analyte Result Qualifier Unit D %Rec Limits Chloride 3090 1250 4253 mg/Kg 93 90 - 110

Lab Sample ID: 880-17282-A-1-F MSD Client Sample ID: Matrix Spike Duplicate **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 30920

MSD MSD %Rec RPD Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Limits RPD Limit Unit D %Rec Chloride 3090 1250 4249 mg/Kg 93 90 - 110 20

QC Association Summary

 Client: Ensolum
 Job ID: 890-2621-1

 Project/Site: JRU D1 1
 SDG: 03E1558063

GC VOA

Prep Batch: 30595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30595/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 30893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-1	PH01 @ 0.5'	Total/NA	Solid	5035	
890-2621-2	PH01 @ 5'	Total/NA	Solid	5035	
MB 880-30893/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30893/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30893/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17457-A-4-B MS	Matrix Spike	Total/NA	Solid	5035	
880-17457-A-4-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-1	PH01 @ 0.5'	Total/NA	Solid	8021B	30893
890-2621-2	PH01 @ 5'	Total/NA	Solid	8021B	30893
MB 880-30595/5-A	Method Blank	Total/NA	Solid	8021B	30595
MB 880-30893/5-A	Method Blank	Total/NA	Solid	8021B	30893
LCS 880-30893/1-A	Lab Control Sample	Total/NA	Solid	8021B	30893
LCSD 880-30893/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30893
880-17457-A-4-B MS	Matrix Spike	Total/NA	Solid	8021B	30893
880-17457-A-4-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30893

Analysis Batch: 31091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-1	PH01 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2621-2	PH01 @ 5'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-1	PH01 @ 0.5'	Total/NA	Solid	8015B NM	30666
890-2621-2	PH01 @ 5'	Total/NA	Solid	8015B NM	30666
MB 880-30666/1-A	Method Blank	Total/NA	Solid	8015B NM	30666
LCS 880-30666/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30666
LCSD 880-30666/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30666
890-2618-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	30666
890-2618-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30666

Prep Batch: 30666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-1	PH01 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2621-2	PH01 @ 5'	Total/NA	Solid	8015NM Prep	
MB 880-30666/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30666/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30666/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2618-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2618-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum Job ID: 890-2621-1 Project/Site: JRU D1 1 SDG: 03E1558063

GC Semi VOA

Analysis Batch: 30803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-1	PH01 @ 0.5'	Total/NA	Solid	8015 NM	
890-2621-2	PH01 @ 5'	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-1	PH01 @ 0.5'	Soluble	Solid	DI Leach	
MB 880-30600/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30600/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30600/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-17277-A-3-E MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17277-A-3-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Leach Batch: 30602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-2	PH01 @ 5'	Soluble	Solid	DI Leach	_
MB 880-30602/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30602/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30602/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-17266-A-41-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17266-A-41-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-17282-A-1-E MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17282-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-1	PH01 @ 0.5'	Soluble	Solid	300.0	30600
MB 880-30600/1-A	Method Blank	Soluble	Solid	300.0	30600
LCS 880-30600/2-A	Lab Control Sample	Soluble	Solid	300.0	30600
LCSD 880-30600/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30600
880-17277-A-3-E MS	Matrix Spike	Soluble	Solid	300.0	30600
880-17277-A-3-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30600

Analysis Batch: 30920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2621-2	PH01 @ 5'	Soluble	Solid	300.0	30602
MB 880-30602/1-A	Method Blank	Soluble	Solid	300.0	30602
LCS 880-30602/2-A	Lab Control Sample	Soluble	Solid	300.0	30602
LCSD 880-30602/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30602
880-17266-A-41-B MS	Matrix Spike	Soluble	Solid	300.0	30602
880-17266-A-41-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30602
880-17282-A-1-E MS	Matrix Spike	Soluble	Solid	300.0	30602
880-17282-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30602

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 Client: Ensolum
 Job ID: 890-2621-1

 Project/Site: JRU D1 1
 SDG: 03E1558063

Client Sample ID: PH01 @ 0.5'

Date Collected: 07/21/22 10:14 Date Received: 07/21/22 16:36 **Lab Sample ID: 890-2621-1**

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	30893	07/28/22 09:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31046	07/31/22 01:18	AJ	XEN MID
Total/NA	Analysis	Total BTEX		1			31091	07/31/22 09:18	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			30803	07/27/22 10:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30666	07/26/22 10:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30643	07/27/22 00:24	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	30600	07/25/22 15:21	KS	XEN MID
Soluble	Analysis	300.0		1			30692	07/27/22 03:08	CH	XEN MID

Client Sample ID: PH01 @ 5'

Date Collected: 07/21/22 10:20

Date Received: 07/21/22 16:36

Lab Sample ID: 890-2621-2

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	30893	07/28/22 09:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31046	07/31/22 01:38	AJ	XEN MID
Total/NA	Analysis	Total BTEX		1			31091	07/31/22 09:18	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			30803	07/27/22 10:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30666	07/26/22 10:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30643	07/27/22 00:46	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	30602	07/25/22 15:34	KS	XEN MID
Soluble	Analysis	300.0		1			30920	07/29/22 12:28	SMC	XEN MID

Laboratory References:

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

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Accreditation/Certification Summary

Client: Ensolum Job ID: 890-2621-1 Project/Site: JRU D1 1 SDG: 03E1558063

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 06-30-23	
Texas	NE	ELAP	T104704400-22-24		
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	Analyte Total TPH		

Method Summary

 Client: Ensolum
 Job ID: 890-2621-1

 Project/Site: JRU D1 1
 SDG: 03E1558063

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

Protocol References:

ASTM = ASTM International

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Eurofins Carlsbad

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Sample Summary

Client: Ensolum Project/Site: JRU D1 1 Job ID: 890-2621-1

SDG: 03E1558063

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depti
890-2621-1	PH01 @ 0.5'	Solid	07/21/22 10:14	07/21/22 16:36	0.5'
890-2621-2	PH01 @ 5'	Solid	07/21/22 10:20	07/21/22 16:36	5'

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2621-1

SDG Number: 03E1558063

Login Number: 2621 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	

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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2621-1 SDG Number: 03E1558063

Login Number: 2621 List Source: Eurofins Midland
List Number: 2 List Creation: 07/22/22 12:56 PM

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").



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2707-1

Laboratory Sample Delivery Group: 03E1558063

Client Project/Site: JRU DI1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

MRAMER

Authorized for release by 8/12/2022 7:58:33 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Authorized for release by:

Review your project results through EOL.

Have a Question?

------ LINKS ------

Visit us at:

www.eurofinsus.com/Env
Released to Imaging: 11/30/2022 3:43:27 PM

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

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

Client: Ensolum
Project/Site: JRU DI1
Laboratory Job ID: 890-2707-1
SDG: 03E1558063

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Definitions/Glossary

Client: Ensolum Job ID: 890-2707-1 Project/Site: JRU DI1 SDG: 03E1558063

Qualifiers

GC VOA

Qualifier **Qualifier Description**

Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

NC

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

DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)

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

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

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

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NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

QC	Quality Control
RFR	Relative Error Ratio (Radiochemistry)

Not Calculated

RL	Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

Case Narrative

 Client: Ensolum
 Job ID: 890-2707-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Job ID: 890-2707-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2707-1

Receipt

The sample was received on 8/2/2022 3:53 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 3.0° C

GC VOA

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: PH04 (890-2707-1), (890-2706-A-1-A), (890-2706-A-1-B MS) and (890-2706-A-1-C MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31559 and analytical batch 880-31937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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Matrix: Solid

Lab Sample ID: 890-2707-1

Client Sample Results

 Client: Ensolum
 Job ID: 890-2707-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Client Sample ID: PH04

Date Collected: 08/02/22 11:55 Date Received: 08/02/22 15:53

Sample Depth: 5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:52	08/07/22 18:11	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:52	08/07/22 18:11	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:52	08/07/22 18:11	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		08/05/22 11:52	08/07/22 18:11	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:52	08/07/22 18:11	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/05/22 11:52	08/07/22 18:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			08/05/22 11:52	08/07/22 18:11	1
1,4-Difluorobenzene (Surr)	107		70 - 130			08/05/22 11:52	08/07/22 18:11	1
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Range	•		DI.	11-14		Dunnand	Amahasad	D!! F
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			08/08/22 11:58	1
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	
Gasoline Range Organics								Dil Fac
0 0	<49.8	U	49.8	mg/Kg		08/05/22 09:50	08/05/22 23:20	
0 0	<49.8 <49.8		49.8 49.8	mg/Kg		08/05/22 09:50 08/05/22 09:50		1
(GRO)-C6-C10 Diesel Range Organics (Over		U					08/05/22 23:20	1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		08/05/22 09:50	08/05/22 23:20 08/05/22 23:20	1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<49.8 <49.8	U U	49.8 49.8	mg/Kg		08/05/22 09:50 08/05/22 09:50	08/05/22 23:20 08/05/22 23:20 08/05/22 23:20	1 1 1 Dil Fac
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate	<49.8 <49.8 %Recovery	U U Qualifier	49.8 49.8 <i>Limits</i>	mg/Kg		08/05/22 09:50 08/05/22 09:50 Prepared	08/05/22 23:20 08/05/22 23:20 08/05/22 23:20 Analyzed	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	<49.8 <49.8 %Recovery 68 79	U U Qualifier S1-	49.8 49.8 Limits 70 - 130	mg/Kg		08/05/22 09:50 08/05/22 09:50 Prepared 08/05/22 09:50	08/05/22 23:20 08/05/22 23:20 08/05/22 23:20 Analyzed 08/05/22 23:20	Dil Fac
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl	<49.8 <49.8 **Recovery 68 79 omatography -	U U Qualifier S1-	49.8 49.8 Limits 70 - 130	mg/Kg	D	08/05/22 09:50 08/05/22 09:50 Prepared 08/05/22 09:50	08/05/22 23:20 08/05/22 23:20 08/05/22 23:20 Analyzed 08/05/22 23:20	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Surrogate Summary

Client: Ensolum Job ID: 890-2707-1 Project/Site: JRU DI1 SDG: 03E1558063

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)	
890-2692-A-1-F MS	Matrix Spike	98	104	
890-2692-A-1-G MSD	Matrix Spike Duplicate	96	102	
890-2707-1	PH04	103	107	
LCS 880-31576/1-A	Lab Control Sample	96	106	
LCSD 880-31576/2-A	Lab Control Sample Dup	92	103	
MB 880-31576/5-A	Method Blank	98	95	
Surrogate Legend				

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)	
890-2706-A-1-B MS	Matrix Spike	68 S1-	67 S1-	
890-2706-A-1-C MSD	Matrix Spike Duplicate	63 S1-	65 S1-	
890-2707-1	PH04	68 S1-	79	
LCS 880-31555/2-A	Lab Control Sample	89	96	
LCSD 880-31555/3-A	Lab Control Sample Dup	89	97	
MB 880-31555/1-A	Method Blank	83	101	
Surrogate Legend				

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2707-1 SDG: 03E1558063 Project/Site: JRU DI1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31576/5-A

Matrix: Solid

Analysis Batch: 31656

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31576

	МВ	мв						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:52	08/07/22 14:43	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:52	08/07/22 14:43	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:52	08/07/22 14:43	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/05/22 11:52	08/07/22 14:43	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 11:52	08/07/22 14:43	1
Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		08/05/22 11:52	08/07/22 14:43	1

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130	08/05/22 11:52	08/07/22 14:43	1
1,4-Difluorobenzene (Surr)	95		70 - 130	08/05/22 11:52	08/07/22 14:43	1

Lab Sample ID: LCS 880-31576/1-A

Matrix: Solid

Analysis Batch: 31656

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31576

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09840		mg/Kg		98	70 - 130	
Toluene	0.100	0.1101		mg/Kg		110	70 - 130	
Ethylbenzene	0.100	0.09388		mg/Kg		94	70 - 130	
m-Xylene & p-Xylene	0.200	0.2024		mg/Kg		101	70 - 130	
o-Xylene	0.100	0.09923		mg/Kg		99	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

Lab Sample ID: LCSD 880-31576/2-A

Matrix: Solid

Analysis Batch: 31656

	Client Sam	ple ID: Lab	Control Sam	ple Dup
--	------------	-------------	--------------------	---------

Prep Type: Total/NA

Prep Batch: 31576

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1124		mg/Kg		112	70 - 130	13	35
Toluene	0.100	0.1077		mg/Kg		108	70 - 130	2	35
Ethylbenzene	0.100	0.08729		mg/Kg		87	70 - 130	7	35
m-Xylene & p-Xylene	0.200	0.1826		mg/Kg		91	70 - 130	10	35
o-Xylene	0.100	0.08974		mg/Kg		90	70 - 130	10	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1.4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 890-2692-A-1-F MS

Matrix: Solid

Analysis Batch: 31656

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

Prep Batch: 31576

		Sample	Sample	Spike	MS	MS				%Rec	
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Benzene	<0.00201	U	0.101	0.1015		mg/Kg		101	70 - 130	
١	Toluene	<0.00201	U	0.101	0.09221		mg/Kg		92	70 - 130	

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Client: Ensolum Job ID: 890-2707-1 Project/Site: JRU DI1 SDG: 03E1558063

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

Lab Sample ID: 890-2692-A-1-G MSD

Matrix: Solid

Matrix: Solid

Analysis Batch: 31656

Lab Sample ID: 890-2692-A-1-F MS Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31576

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.00201 U 0.101 0.07243 72 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00402 U 0.201 0.1505 mg/Kg 75 70 - 130 0.07369 <0.00201 U 0.101 73 70 - 130 o-Xylene mg/Kg

MS MS

Surrogate %Recovery Qualifier Limits 70 - 130 4-Bromofluorobenzene (Surr) 98 1,4-Difluorobenzene (Surr) 104 70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31576

RPD

Analysis Batch: 31656 Sample Sample Spike MSD MSD Result Qualifier Result Qualifier %Rec RPD Limit Analyte babbA Unit Limits Benzene <0.00201 U 0.0998 0.1015 mg/Kg 102 70 - 130 0 35 0.09175 Toluene <0.00201 U 0.0998 mg/Kg 92 70 - 130 35 Ethylbenzene <0.00201 U 0.0998 0.07057 71 70 - 130 35 mg/Kg 3 0.200 70 - 130 35 m-Xylene & p-Xylene <0.00402 U 0.1460 mg/Kg 73 3 <0.00201 U 0.0998 0.07205 72 70 - 130 2 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	96	70 - 130
1,4-Difluorobenzene (Surr)	102	70 - 130

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

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

Matrix: Solid

Analysis Batch: 31531

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31555

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1

MB MB

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

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

Matrix: Solid

Analysis Batch: 31531

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

Prep Batch: 31555

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

Client: Ensolum Job ID: 890-2707-1 Project/Site: JRU DI1 SDG: 03E1558063

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

LCS LCS

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

Matrix: Solid

Analysis Batch: 31531

Prep Type: Total/NA

Prep Batch: 31555

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

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

Matrix: Solid

Analysis Batch: 31531

Prep Type: Total/NA

Prep Batch: 31555

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit 1000 855.1 86 70 - 1303 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 871.0 87 mg/Kg 70 - 1300 20 C10-C28)

LCSD LCSD

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

Lab Sample ID: 890-2706-A-1-B MS Client Sample ID: Matrix Spike

Matrix: Solid

Analysis Batch: 31531

Prep Type: Total/NA

Prep Batch: 31555

Sample Sample Spike MS MS Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <49.9 U 999 833.2 mg/Kg 81 70 - 130 (GRO)-C6-C10 666.4 F1 Diesel Range Organics (Over 92.2 F1 999 mg/Kg 57 70 - 130 C10-C28)

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

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

Analysis Batch: 31531

Prep Type: Total/NA

Prep Batch: 31555

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	<49.9	U	999	850.8		mg/Kg		83	70 - 130	2	20	
(GRO)-C6-C10												
Diesel Range Organics (Over	92.2	F1	999	643.6	F1	mg/Kg		55	70 - 130	3	20	
C10-C28)												

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

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

 Client: Ensolum
 Job ID: 890-2707-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31559/1-A

Matrix: Solid

Analysis Batch: 31937

MB MB

 Analyte
 Result Chloride
 Qualifier
 RL Unit
 Unit
 D mg/Kg
 Prepared
 Analyzed Malyzed
 Dil Fac Dil Fa

Lab Sample ID: LCS 880-31559/2-A

Matrix: Solid

Analysis Batch: 31937

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

Lab Sample ID: LCSD 880-31559/3-A

Matrix: Solid

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

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

QC Association Summary

 Client: Ensolum
 Job ID: 890-2707-1

 Project/Site: JRU DI1
 SDG: 03E1558063

GC VOA

Prep Batch: 31576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2707-1	PH04	Total/NA	Solid	5035	
MB 880-31576/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31576/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31576/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2692-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2692-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2707-1	PH04	Total/NA	Solid	8021B	31576
MB 880-31576/5-A	Method Blank	Total/NA	Solid	8021B	31576
LCS 880-31576/1-A	Lab Control Sample	Total/NA	Solid	8021B	31576
LCSD 880-31576/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31576
890-2692-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	31576
890-2692-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31576

Analysis Batch: 31866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2707-1	PH04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 31531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2707-1	PH04	Total/NA	Solid	8015B NM	31555
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015B NM	31555
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31555
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31555
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	31555
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31555

Prep Batch: 31555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2707-1	PH04	Total/NA	Solid	8015NM Prep	
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2707-1	PH04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 31559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2707-1	PH04	Soluble	Solid	DI Leach	
MB 880-31559/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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Eurofins Carlsbad

8/12/2022

QC Association Summary

 Client: Ensolum
 Job ID: 890-2707-1

 Project/Site: JRU DI1
 SDG: 03E1558063

HPLC/IC (Continued)

Leach Batch: 31559 (Continued)

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

Analysis Batch: 31937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2707-1	PH04	Soluble	Solid	300.0	31559
MB 880-31559/1-A	Method Blank	Soluble	Solid	300.0	31559
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	300.0	31559
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31559
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	31559
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31559

Eurofins Carlsbad

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Lab Chronicle

Client: Ensolum Job ID: 890-2707-1 Project/Site: JRU DI1 SDG: 03E1558063

Client Sample ID: PH04

Lab Sample ID: 890-2707-1 Date Collected: 08/02/22 11:55

Matrix: Solid

Date Received: 08/02/22 15:53

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	31576	08/05/22 11:52	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31656	08/07/22 18:11	MR	EET MID
Total/NA	Analysis	Total BTEX		1			31866	08/09/22 16:25	SM	EET MID
Total/NA	Analysis	8015 NM		1			31751	08/08/22 11:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	31555	08/05/22 09:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31531	08/05/22 23:20	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	31559	08/05/22 10:29	СН	EET MID
Soluble	Analysis	300.0		1			31937	08/12/22 06:51	AJ	EET MID

Laboratory References:

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

Accreditation/Certification Summary

 Client: Ensolum
 Job ID: 890-2707-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Laboratory: Eurofins Midland

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

Authority Texas		ogram	Identification Number	Expiration Date 06-30-23	
		ELAP	T104704400-22-24		
The following analytes	are included in this renert hu	it the leberatory is not contiffi	to all booking and committees as all a side of Their Booking.		
the agency does not of		at the laboratory is not certil	ied by the governing authority. This list ma	ay include analytes for v	
,		Matrix	led by the governing authority. This list ma	ay include analytes for v	
the agency does not of	fer certification.	•	, , ,	ay include analytes for v	

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Method Summary

 Client: Ensolum
 Job ID: 890-2707-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

Protocol References:

ASTM = ASTM International

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Eurofins Carlsbad

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Sample Summary

Client: Ensolum Project/Site: JRU DI1 Job ID: 890-2707-1 SDG: 03E1558063

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Depth

 890-2707-1
 PH04
 Solid
 08/02/22 11:55
 08/02/22 15:53
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Relinquished by: (Signature)

Receixed by: (Signature)

23 CC CC CC

Revised Date: 08/25/2020 Rev. 2020 :

eurofins

Environment Testing

Chain of Custody

Midland, TX (43) EL Paso, TX (9 Hobbs, NM (57 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

IEST Preservative Codes	ANALYSIS REQUEST
Deliverables: EDD ADaPT Other:	<u>.com</u>
Reporting: Level III Level III PST/UST TRRP Level IV	Carlsbad, NM 88220
State of Project:	3104 E. Green Street
Program: UST/PST 🗌 PRP 🗌 Brownfields 🗌 RRC 🔝 Superfund 🔲	XTO Energy F
Work Order Comments	Garrett Green
www.xenco.com Page of	
	75) 392-7550, Carlsbad, NM (575) 988-3199
	915) 585-3443, Lubbock, TX (806) 794-1296
Work Order No:	(2) 704-5440, San Antonio, TX (210) 509-3334

Relinquished by: (Signature)	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$86.00 will be applied to each project and a charge of \$6 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010			111	X	()					PH04	Sample identification	Total Containers:	Sample Custody Seals:	Cooler Custody Seals:	Samples Received Intact:	SAMPLE RECEIPT	PO #
nature)	ent and relinquis be liable only for charge of \$85.00	etal(s) to be a	200.8 / 6020:				/	1								Yes No	Yes No	Yyds No	Temp Blank:	
-	hment of the cost will be a	analyz	Ö	_					1				S	Matrix		N/A	3			
Receixed by: (Signature)	samples cons of samples an pplied to each	ed	8							1			08.02.22	Date Sampled	Corrected Temperature:	N/A Temperature Reading:	Correction Factor:	Thermometer ID:	Yes) No	
by: (Signa	titutes a valid d shall not ass project and a c	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn										1155	Time Sampled	mperature:	Reading:	actor:	r ID:	Wet Ice:	tile lab, il leceived by 4:30biii
ture)	purchase ume any harge of	PLP 6	Mdc										ΩĪ	Depth	-1)	'n	1	MIN	Yes	SIVED
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Date/Time	y to Euro es or exp ted to Et	s Ba	Ва										×	TPH (8	015)					
	ofins Xen Denses in Purofins X	ВеС	3e B										×	BTEX (8021	_				
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D		70 / 7	\ \				5-475				er: 108): nAP	ole Co	orbic A	NaOH	aSU ₃	ABIS		
Date/Time		471	Zn				14				Cost Center: 1082151001		P2216	Sample Comments	NaOH+Ascorbic Acid: SAPC	:Zn				NaCit. Na
le le											101		Incident ID: nAPP2216152113	İ	PC					9
		J <u>L</u>		<u> </u>	-					1	1	1_	<u>1ω</u>	1	1			-		
																	Ι.			

Sampler's Name:

Conner Shore

Due Date:

✓ Routine

Rush

Turn Around

TAT starts the day received by the lab, if received by 4:30pm

HCL: HC H₂S0₄: H₂ Cool: Cool

NaOH: Na

None: NO

DI Water: H₂O

МеОН: Ме HNO3: HN

Project Location:

Project Number:

03E1558063 JRU DI 1

Project Name:

City, State ZIP: Address: Company Name:

303-887-2946 Carlsbad, NM 88220 3122 National Parks Hwy

Email: tmorrissey@ensolur

City, State ZIP: Address: Company Name: Bill to: (if different)

Project Manager:

Tacoma Morrissey

Ensolum

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-2707-1 SDG Number: 03E1558063

Login Number: 2707 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: 890-2707-1 SDG Number: 03E1558063

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

Login Number: 2707 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	

Eurofins Carlsbad

<6mm (1/4").

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Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2708-1

Laboratory Sample Delivery Group: 03E1558063

Client Project/Site: JRU DI1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

RAMER

8/12/2022 7:58:52 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Authorized for release by:

Have a Question?

EOL

------ LINKS ------

Review your project results through

Visit us at:

www.eurofinsus.com/Env Released to Imaging: 11/30/2022 3:43:27 PM 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: JRU DI1
Laboratory Job ID: 890-2708-1
SDG: 03E1558063

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Definitions/Glossary

Job ID: 890-2708-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

Qualifiers

GC VOA Qualifier

F1 MS and/or MSD recovery exceeds control limits. F2 MS/MSD RPD exceeds control limits

Qualifier Description

S1+ Surrogate recovery exceeds control limits, high biased.

U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description** F1 MS and/or MSD recovery exceeds control limits. S1-Surrogate recovery exceeds control limits, low biased.

HPLC/IC

U

Qualifier **Qualifier Description**

F1 MS and/or MSD recovery exceeds control limits.

U Indicates the analyte was analyzed for but not detected.

Glossary

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

Indicates the analyte was analyzed for but not detected.

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)

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

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

MDL Method Detection Limit MI Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

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: 890-2708-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Job ID: 890-2708-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2708-1

Receipt

The sample was received on 8/2/2022 3:53 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 3.0°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31602 and 880-31669 and analytical batch 880-31654 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: PH04 (890-2708-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31669 and analytical batch 880-31654 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC Semi VOA

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

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

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31559 and analytical batch 880-31937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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Eurofins Carlsbad 8/12/2022

Released to Imaging: 11/30/2022 3:43:27 PM

Job ID: 890-2708-1

Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063 **Client Sample ID: PH04** Lab Sample ID: 890-2708-1

Date Collected: 08/02/22 11:20 Matrix: Solid Date Received: 08/02/22 15:53

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 20:37	
Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 20:37	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 20:37	
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		08/05/22 13:42	08/07/22 20:37	
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 20:37	
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/05/22 13:42	08/07/22 20:37	•
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	151	S1+	70 - 130			08/05/22 13:42	08/07/22 20:37	
1,4-Difluorobenzene (Surr)	95		70 - 130			08/05/22 13:42	08/07/22 20:37	
- Method: Total BTEX - Total BTE)	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00399	U	0.00399	mg/Kg			08/08/22 16:27	
Method: 8015 NM - Diesel Range Analyte	Result	Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fa
Total TPH	<50.0		50.0	mg/Kg	— <u>-</u>		08/08/22 11:58	
Method: 8015B NM - Diesel Rang	no Organico (D	()						
	de Organics (D	RO) (GC)						
Analyte	•	RO) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics	•	Qualifier	RL 50.0	Unit mg/Kg	<u>D</u>	Prepared 08/05/22 09:50	Analyzed 08/05/22 23:42	Dil Fac
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result	Qualifier U			<u>D</u>			
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result < 50.0	Qualifier U	50.0	mg/Kg	<u> </u>	08/05/22 09:50	08/05/22 23:42	
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <50.0 <50.0	Qualifier U U U	50.0	mg/Kg	<u>D</u>	08/05/22 09:50 08/05/22 09:50	08/05/22 23:42 08/05/22 23:42	
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <50.0 <50.0 <50.0	Qualifier U U U	50.0 50.0 50.0	mg/Kg	<u>D</u>	08/05/22 09:50 08/05/22 09:50 08/05/22 09:50	08/05/22 23:42 08/05/22 23:42 08/05/22 23:42	
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	Result	Qualifier U U U	50.0 50.0 50.0 <i>Limits</i>	mg/Kg	<u> </u>	08/05/22 09:50 08/05/22 09:50 08/05/22 09:50 Prepared	08/05/22 23:42 08/05/22 23:42 08/05/22 23:42 Analyzed	Dil Fa
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl Method: 300.0 - Anions, Ion Chro	Result	Qualifier U U Qualifier	50.0 50.0 50.0 Limits 70 - 130	mg/Kg	<u>D</u>	08/05/22 09:50 08/05/22 09:50 08/05/22 09:50 Prepared 08/05/22 09:50	08/05/22 23:42 08/05/22 23:42 08/05/22 23:42 Analyzed 08/05/22 23:42	Dil Fa
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	50.0 50.0 50.0 Limits 70 - 130	mg/Kg	<u>D</u>	08/05/22 09:50 08/05/22 09:50 08/05/22 09:50 Prepared 08/05/22 09:50	08/05/22 23:42 08/05/22 23:42 08/05/22 23:42 Analyzed 08/05/22 23:42	Dil Fa

Surrogate Summary

 Client: Ensolum
 Job ID: 890-2708-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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)	
890-2689-A-13-E MS	Matrix Spike	114	95	
890-2689-A-13-F MSD	Matrix Spike Duplicate	120	94	
890-2703-A-1-C MS	Matrix Spike	109	95	
890-2703-A-1-D MSD	Matrix Spike Duplicate	113	80	
890-2708-1	PH04	151 S1+	95	
LCS 880-31602/1-A	Lab Control Sample	107	99	
LCS 880-31669/1-A	Lab Control Sample	100	99	
LCSD 880-31602/2-A	Lab Control Sample Dup	99	97	
LCSD 880-31669/2-A	Lab Control Sample Dup	101	101	
MB 880-31602/5-A	Method Blank	95	80	
MB 880-31669/5-A	Method Blank	130	111	
Surrogate Legend				

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

Matrix: Solid Prep Type: Total/NA

	1001	OTDIIA	
		OTPH1	
Client Sample ID	(70-130)	(70-130)	
Matrix Spike	68 S1-	67 S1-	
Matrix Spike Duplicate	63 S1-	65 S1-	
PH04	78	85	
Lab Control Sample	89	96	
Lab Control Sample Dup	89	97	
Method Blank	83	101	
	Matrix Spike Duplicate PH04 Lab Control Sample Lab Control Sample Dup	Matrix Spike Duplicate 63 S1- PH04 78 Lab Control Sample 89 Lab Control Sample Dup 89	Matrix Spike Duplicate 63 S1- 65 S1- PH04 78 85 Lab Control Sample 89 96 Lab Control Sample Dup 89 97

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OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2708-1 SDG: 03E1558063 Project/Site: JRU DI1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31602/5-A

Lab Sample ID: LCS 880-31602/1-A

Matrix: Solid Analysis Batch: 31654 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31602

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/05/22 13:42	08/07/22 13:44	1

MB MB

Surrogate	%Recovery (Qualifier	Limits	Prep	ared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	08/05/2	2 13:42	08/07/22 13:44	1
1,4-Difluorobenzene (Surr)	80		70 - 130	08/05/2	2 13:42	08/07/22 13:44	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31602

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1073 mg/Kg 107 70 - 130 Toluene 0.100 0.1053 mg/Kg 105 70 - 130 0.100 0.1105 Ethylbenzene mg/Kg 111 70 - 130 0.200 0.2245 70 - 130 m-Xylene & p-Xylene mg/Kg 112 0.100 0.1208 70 - 130 o-Xylene mg/Kg 121

LCS LCS

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

Lab Sample ID: LCSD 880-31602/2-A **Client Sample ID: Lab Control Sample Dup**

Matrix: Solid

Matrix: Solid

Analysis Batch: 31654

Analysis Batch: 31654

Prep Type: Total/NA Prep Batch: 31602

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09355		mg/Kg		94	70 - 130	14	35
Toluene	0.100	0.09121		mg/Kg		91	70 - 130	14	35
Ethylbenzene	0.100	0.09177		mg/Kg		92	70 - 130	19	35
m-Xylene & p-Xylene	0.200	0.1821		mg/Kg		91	70 - 130	21	35
o-Xylene	0.100	0.1009		mg/Kg		101	70 - 130	18	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	99	70 - 130
1,4-Difluorobenzene (Surr)	97	70 - 130

Lab Sample ID: 890-2703-A-1-C MS

Matrix: Solid

Analysis Batch: 31654

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

Prep Batch: 31602

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U F2 F1	0.0998	0.04079	F1	mg/Kg		41	70 - 130	
Toluene	< 0.00200	U F2 F1	0.0998	0.04164	F1	mg/Kg		42	70 - 130	

Client Sample ID: Matrix Spike

58

4

15

70 - 130

Client Sample ID: Matrix Spike Duplicate

70 - 130

70 - 130

70 - 130

Prep Type: Total/NA

Prep Type: Total/NA

165

185

119

Job ID: 890-2708-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

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

<0.00200 U F2 F1

Lab Sample ID: 890-2703-A-1-C MS

Matrix: Solid Analysis Batch: 31654

o-Xylene

Prep Batch: 31602 Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits D <0.00200 U F2 F1 0.0998 0.04162 F1 42 70 - 130 Ethylbenzene mg/Kg m-Xylene & p-Xylene <0.00401 U F2 F1 0.200 0.07188 F1 mg/Kg 36 70 - 130

0.05817 F1

mg/Kg

0.0998

MS MS Surrogate Qualifier %Recovery

Limits 70 - 130 4-Bromofluorobenzene (Surr) 109 1,4-Difluorobenzene (Surr) 95 70 - 130

Lab Sample ID: 890-2703-A-1-D MSD

Matrix: Solid

Analysis Batch: 31654 Prep Batch: 31602 Sample Sample Spike MSD MSD RPD Result Qualifier Limit Analyte babbA Result Qualifier %Rec Limits RPD Unit Benzene <0.00200 U F2 F1 0.100 0.002587 F2 F1 mg/Kg 3 70 - 130 176 35 Toluene <0.00200 U F2 F1 0.100 0.003991 F2 F1 mg/Kg 4 70 - 130 165 35

Ethylbenzene U F2 F1 0.100 0.004040 F2 F1 < 0.00200 mg/Kg m-Xylene & p-Xylene < 0.00401 U F2 F1 0.201 <0.00402 U F2 F1 mg/Kg 0.100 0.01486 F2 F1 o-Xylene <0.00200 U F2 F1 mg/Kg MSD MSD

Qualifier Limits Surrogate %Recovery 70 - 130 4-Bromofluorobenzene (Surr) 113 70 - 130 1,4-Difluorobenzene (Surr) 80

Lab Sample ID: MB 880-31669/5-A

Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 31654** Prep Batch: 31669 MB MB

Result Qualifier Dil Fac Analyte RL Unit Prepared Analyzed Benzene <0.00200 U 0.00200 mg/Kg 08/07/22 12:02 08/08/22 00:21 Toluene <0.00200 U 0.00200 08/07/22 12:02 08/08/22 00:21 mg/Kg Ethylbenzene <0.00200 U 0.00200 mg/Kg 08/07/22 12:02 08/08/22 00:21 m-Xylene & p-Xylene <0.00400 0.00400 mg/Kg 08/07/22 12:02 08/08/22 00:21 08/07/22 12:02 08/08/22 00:21 o-Xylene <0.00200 U 0.00200 mg/Kg Xylenes, Total <0.00400 U 0.00400 mg/Kg 08/07/22 12:02 08/08/22 00:21

MB Dil Fac Qualifier Limits Surrogate %Recovery Prepared Analyzed 4-Bromofluorobenzene (Surr) 130 70 - 130 08/07/22 12:02 08/08/22 00:21 08/07/22 12:02 1,4-Difluorobenzene (Surr) 111 70 - 130 08/08/22 00:21

Lab Sample ID: LCS 880-31669/1-A

Matrix: Solid

Analysis Batch: 31654

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

Prep Batch: 31669

-	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1009		mg/Kg		101	70 - 130	
Toluene	0.100	0.09893		mg/Kg		99	70 - 130	
Ethylbenzene	0.100	0.09835		mg/Kg		98	70 - 130	
m-Xylene & p-Xylene	0.200	0.1984		mg/Kg		99	70 - 130	

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Client: Ensolum Project/Site: JRU DI1 Job ID: 890-2708-1 SDG: 03E1558063

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

Lab Sample ID: LCS 880-31669/1-A Client Sample ID: Lab Control Sample

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31654 Prep Batch: 31669

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits D 0.100 0.1126 113 70 - 130 o-Xylene mg/Kg

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 100
 70 - 130

 1,4-Difluorobenzene (Surr)
 99
 70 - 130

Lab Sample ID: LCSD 880-31669/2-A Client Sample ID: Lab Control Sample Dup

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31654 Prep Batch: 31669

Spike LCSD LCSD RPD Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit D Benzene 0.100 0.1023 mg/Kg 102 70 - 130 35 Toluene 0.100 0.1004 mg/Kg 100 70 - 130 2 35 Ethylbenzene 0.100 0.1014 mg/Kg 101 70 - 130 3 35 m-Xylene & p-Xylene 0.200 0.2043 mg/Kg 102 70 - 130 35 0.100 0.1134 113 70 - 130 35 o-Xylene mg/Kg

 Surrogate
 %Recovery 4-Bromofluorobenzene (Surr)
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 101
 70 - 130

 1,4-Diffluorobenzene (Surr)
 101
 70 - 130

Lab Sample ID: 890-2689-A-13-E MS

Client Sample ID: Matrix Spike

Matrix: Solid

Prep Type: Total/NA

Matrix: Solid
Analysis Batch: 31654

MS MS Sample Sample Spike %Rec Result Qualifier Added Result Qualifier Analyte Unit %Rec Limits Benzene <0.00202 U 0.100 0.1058 mg/Kg 105 70 - 130 Toluene <0.00202 U 0.100 0.1129 mg/Kg 112 70 - 130 Ethylbenzene <0.00202 U 0.100 0.1179 mg/Kg 117 70 - 130 m-Xylene & p-Xylene <0.00403 U 0.201 0.2446 mg/Kg 122 70 - 130 o-Xylene <0.00202 UF1 0.100 0.1369 F1 mg/Kg 136 70 - 130

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 114
 70 ـ 130

 1,4-Difluorobenzene (Surr)
 95
 70 ـ 130

Lab Sample ID: 890-2689-A-13-F MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31654 Prep Batch: 31669

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00202	U	0.100	0.1039		mg/Kg		104	70 - 130	2	35
Toluene	<0.00202	U	0.100	0.1120		mg/Kg		112	70 - 130	1	35
Ethylbenzene	<0.00202	U	0.100	0.1218		mg/Kg		122	70 - 130	3	35
m-Xylene & p-Xylene	<0.00403	U	0.200	0.2532		mg/Kg		126	70 - 130	3	35
o-Xylene	<0.00202	U F1	0.100	0.1413	F1	mg/Kg		141	70 - 130	3	35

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Prep Batch: 31669

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Job ID: 890-2708-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

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

Lab Sample ID: 890-2689-A-13-F MSD

Matrix: Solid

Analysis Batch: 31654

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 31669

MSD MSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 120 70 - 130 1,4-Difluorobenzene (Surr) 94 70 - 130

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

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

Matrix: Solid

Analysis Batch: 31531

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31555

	MB	MB					-	
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
C10-C28)								
Oll Range Organics (Over C28-	-C36) <50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1

MB MB

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

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

Matrix: Solid

Analysis Batch: 31531

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31555

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

LCS LCS

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

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

Matrix: Solid

Analysis Batch: 31531

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31555

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

C10-C28)

LCSD LCSD

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

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8/12/2022

Job ID: 890-2708-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

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

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

Matrix: Solid

Analysis Batch: 31531

Client Sample ID: Matrix Spike

Prep Type: Total/NA Prep Batch: 31555

Sample Sample Spike MS MS Result Qualifier Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <49.9 U 999 833.2 mg/Kg 81 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 999 666 4 F1 57 70 - 13092.2 F1 mg/Kg C10-C28)

Limits

70 - 130

70 - 130

999

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

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

Matrix: Solid

Analysis Batch: 31531

Client Sample ID: Matrix Spike Duplicate

70 - 130

Client Sample ID: Method Blank

55

Prep Type: Total/NA Prep Batch: 31555

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Spike MSD MSD %Rec RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits **RPD** Limit 999 Gasoline Range Organics <49.9 U 850.8 mg/Kg 83 70 - 130 2 20 (GRO)-C6-C10

643.6 F1

mg/Kg

Diesel Range Organics (Over C10-C28)

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-31559/1-A

92.2 F1

Matrix: Solid

Analysis Batch: 31937

MB MB

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

Lab Sample ID: LCS 880-31559/2-A

Matrix: Solid

Analysis Batch: 31937

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

Lab Sample ID: LCSD 880-31559/3-A

Matrix: Solid

Analysis Batch: 31937

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

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

Prep Type: Soluble

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

QC Sample Results

Client: Ensolum Job ID: 890-2708-1 Project/Site: JRU DI1 SDG: 03E1558063

Method: 300.0 - Anions, Ion Chromatography (Continued)

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

Matrix: Solid

Analysis Batch: 31937

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

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

Prep Type: Soluble

Analysis Batch: 31937

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

QC Association Summary

 Client: Ensolum
 Job ID: 890-2708-1

 Project/Site: JRU DI1
 SDG: 03E1558063

GC VOA

Prep Batch: 31602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2708-1	PH04	Total/NA	Solid	5035	
MB 880-31602/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31602/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31602/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2703-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-2703-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2708-1	PH04	Total/NA	Solid	8021B	31602
MB 880-31602/5-A	Method Blank	Total/NA	Solid	8021B	31602
MB 880-31669/5-A	Method Blank	Total/NA	Solid	8021B	31669
LCS 880-31602/1-A	Lab Control Sample	Total/NA	Solid	8021B	31602
LCS 880-31669/1-A	Lab Control Sample	Total/NA	Solid	8021B	31669
LCSD 880-31602/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31602
LCSD 880-31669/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31669
890-2689-A-13-E MS	Matrix Spike	Total/NA	Solid	8021B	31669
890-2689-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31669
890-2703-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	31602
890-2703-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31602

Prep Batch: 31669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31669/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31669/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31669/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2689-A-13-E MS	Matrix Spike	Total/NA	Solid	5035	
890-2689-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2708-1	PH04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 31531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2708-1	PH04	Total/NA	Solid	8015B NM	31555
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015B NM	31555
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31555
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31555
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	31555
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31555

Prep Batch: 31555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2708-1	PH04	Total/NA	Solid	8015NM Prep	
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	

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QC Association Summary

 Client: Ensolum
 Job ID: 890-2708-1

 Project/Site: JRU DI1
 SDG: 03E1558063

GC Semi VOA (Continued)

Prep Batch: 31555 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2708-1	PH04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 31559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2708-1	PH04	Soluble	Solid	DI Leach	
MB 880-31559/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2708-1	PH04	Soluble	Solid	300.0	31559
MB 880-31559/1-A	Method Blank	Soluble	Solid	300.0	31559
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	300.0	31559
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31559
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	31559
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31559

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Lab Chronicle

Client: Ensolum Job ID: 890-2708-1 Project/Site: JRU DI1 SDG: 03E1558063

Client Sample ID: PH04

Date Received: 08/02/22 15:53

Lab Sample ID: 890-2708-1 Date Collected: 08/02/22 11:20

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	31602	08/05/22 13:42	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31654	08/07/22 20:37	EL	EET MID
Total/NA	Analysis	Total BTEX		1			31805	08/08/22 16:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			31752	08/08/22 11:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	31555	08/05/22 09:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31531	08/05/22 23:42	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	31559	08/05/22 10:29	СН	EET MID
Soluble	Analysis	300.0		1			31937	08/12/22 07:00	AJ	EET MID

Laboratory References:

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

Accreditation/Certification Summary

 Client: Ensolum
 Job ID: 890-2708-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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 certific	ed by the governing authority. This list ma	ay include analytes for
9,	iei ceitilication.			
Analysis Method	Prep Method	Matrix	Analyte	
0 ,		Matrix Solid	Analyte Total TPH	

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Method Summary

Job ID: 890-2708-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

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: JRU DI1 Job ID: 890-2708-1

SDG: 03E1558063

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2708-1	PH04	Solid	08/02/22 11:20	08/02/22 15:53	0.5

eurofins: Xenco **Environment Testing**

Phone:

303-887-2946 Carlsbad, NM 88220 3122 National Parks Hwy

Email: tmorrissey@ensolum.com

City, State ZIP:

Carlsbad, NM 88220

3104 E. Green Street

Address:

Turn Around

Rush

Pres.

Cool: Cool HCL: HC

MeOH: Me HNO₃: HN

None: NO

DI Water: H₂O

Project Name:

City, State ZIP:

Sampler's Name: Project Location: Project Number:

Conner Shore

Due Date: ✓ Routine

03E1558063 JRU DI 1 Project Manager:

Tacoma Morrissey

Company Name: Address:

Ensolum

Company Name:

XTO Energy Garrett Green

Bill to: (if different)

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, Dailas, TX (214) 902-0300

Deliverables: EDD	
Reporting: Level II	
State of Project:	
Program: UST/PST ☐ PRP☐ Brownfields ☐ RRC ☐ Superfund ☐	
Work Order Comments	
www.xenco.com Page + of L	
_	188-3199
	94-1296
Work Order No:	509-3334

		< > (Jac)	Relinquished by: (Signature) / Received	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from citent company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of service. A minimum charge of \$86.00 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.	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed		8				PH04 S 08.02.22	Sample Identification Matrix Sampled	Total Containers: Corrected	Sample Custody Seals: Yes No N/A Temperat	Cooler Custody Seals: Yes No NA Correction Factor	Samples Received Intact: Yes No Thermometer ID:	SAMPLE RECEIPT Temp Blank: Yes No	
		The state of the s	Receiyed by: (Signature)	constitutes a valid purchase order fr s and shall not assume any respons ach project and a charge of \$5 for ea	8RCRA 13PPM Texas 11 Al TCLP / SPLP 6010: 8RCRA					1	1120 0.5' C	Time Depth Comp	Corrected Temperature: 3.0	Temperature Reading: 3.2		eter ID: N/M DO	Wet Ice: (Yes) No	
		8.2.03 15532	Date/Time	om client company to Eurofins Xe ibility for any losses or expenses sch sample submitted to Eurofins	11 Al Sb As Ba Be B						-1 × ×	CHLOF	015)				nete	
C	4 0	72	Relinquished by: (Signature)	enco, its affiliates and subcontractors. It assign incurred by the client if such losses are due to s Xenco, but not analyzed. These terms will be er	8RCRA 13PPM Texas 11 AISb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg MiTCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se /									890-2708 Chain of Custody				
			Received by: (Signature)	ns standard terms and conditions circumstances beyond the control nforced unless previously negotiated.	b Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn Ni Se Ag Ti U Hg: 1631/245.1/7470/7471		API:	AFE:	Cost		Incide				Na ₂ S ₂	NaHS	H ₃ PO ₄ : HP	
Revised Date: 08/25/2020 Rev 2020 2			Date/Time		/ 7470 / 7471		API: 30-015-47514		Cost Center: 1082151001		ncident ID: nAPP2216152113	Sample Comments	NaCH+Ascorbic Acid: SAPC	Zn Acetate+NaOH: Zn	Na ₂ S ₂ O ₃ : NaSO ₃	NaHSO ₄ : NABIS	#: #3	

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-2708-1 SDG Number: 03E1558063

Login Number: 2708 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

Question Answer Comment

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate

HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested

MS/MSDs

Containers requiring zero headspace have no headspace or bubble is

<6mm (1/4").

Released to Imaging: 11/30/2022 3:43:27 PM

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2708-1 SDG Number: 03E1558063

Login Number: 2708

List Source: Eurofins Midland
List Number: 2

List Creation: 08/04/22 10:22 AM

Creator: Rodriguez, Leticia

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <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: 890-2709-1

Laboratory Sample Delivery Group: 03E1558063

Client Project/Site: JRU DI1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

RAMER

8/12/2022 7:59:09 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Authorized for release by:

Have a Question?

EOL

------ LINKS ------

Review your project results through

Visit us at:

www.eurofinsus.com/Env Released to Imaging: 11/30/2022 3:43:27 PM signature is intended to be the legally binding equivalent of a traditionally handwritten

This report has been electronically signed and authorized by the signatory. Electronic

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

Client: Ensolum
Project/Site: JRU DI1
Laboratory Job ID: 890-2709-1
SDG: 03E1558063

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Definitions/Glossary

Client: Ensolum Job ID: 890-2709-1 Project/Site: JRU DI1 SDG: 03E1558063

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

LOD

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)

LOQ Limit of Quantitation (DoD/DOE) MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Limit of Detection (DoD/DOE)

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

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present **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: 890-2709-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Job ID: 890-2709-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2709-1

Receipt

The sample was received on 8/2/2022 3:53 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 3.0°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31669 and analytical batch 880-31654 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31669 and analytical batch 880-31654 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC Semi VOA

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

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

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31559 and analytical batch 880-31937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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Matrix: Solid

Lab Sample ID: 890-2709-1

Client Sample Results

Client: Ensolum Job ID: 890-2709-1 Project/Site: JRU DI1 SDG: 03E1558063

Client Sample ID: PH02

Date Collected: 08/02/22 11:00 Date Received: 08/02/22 15:53

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/07/22 12:02	08/08/22 08:12	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/07/22 12:02	08/08/22 08:12	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/07/22 12:02	08/08/22 08:12	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		08/07/22 12:02	08/08/22 08:12	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		08/07/22 12:02	08/08/22 08:12	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		08/07/22 12:02	08/08/22 08:12	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	113		70 - 130			08/07/22 12:02	08/08/22 08:12	1
1,4-Difluorobenzene (Surr)	92		70 - 130			08/07/22 12:02	08/08/22 08:12	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			08/08/22 16:27	1
Method: 8015 NM - Diesel Range Analyte		O) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/08/22 11:58	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		08/05/22 09:50	08/06/22 00:04	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/06/22 00:04	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/06/22 00:04	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	74		70 - 130			08/05/22 09:50	08/06/22 00:04	1
o-Terphenyl	87		70 - 130			08/05/22 09:50	08/06/22 00:04	1
		0 - 1 - 1 - 1 -						
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Method: 300.0 - Anions, Ion Chro Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Surrogate Summary

Client: Ensolum Job ID: 890-2709-1 Project/Site: JRU DI1 SDG: 03E1558063

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)	
890-2689-A-13-E MS	Matrix Spike	114	95	
890-2689-A-13-F MSD	Matrix Spike Duplicate	120	94	
890-2709-1	PH02	113	92	
LCS 880-31669/1-A	Lab Control Sample	100	99	
LCSD 880-31669/2-A	Lab Control Sample Dup	101	101	
MB 880-31602/5-A	Method Blank	95	80	
MB 880-31669/5-A	Method Blank	130	111	

DFBZ = 1,4-Difluorobenzene (Surr)

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

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

				Percent Surrogate Re
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2706-A-1-B MS	Matrix Spike	68 S1-	67 S1-	
890-2706-A-1-C MSD	Matrix Spike Duplicate	63 S1-	65 S1-	
890-2709-1	PH02	74	87	
LCS 880-31555/2-A	Lab Control Sample	89	96	
LCSD 880-31555/3-A	Lab Control Sample Dup	89	97	
MB 880-31555/1-A	Method Blank	83	101	
Surrogate Legend				
1CO = 1-Chlorooctane				

Eurofins Carlsbad

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2709-1 SDG: 03E1558063 Project/Site: JRU DI1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31602/5-A

Matrix: Solid

Analysis Batch: 31654

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31602

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/05/22 13:42	08/07/22 13:44	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/05/22 13:42	08/07/22 13:44	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	08/05/22 13:42	08/07/22 13:44	1
1,4-Difluorobenzene (Surr)	80		70 - 130	08/05/22 13:42	08/07/22 13:44	1

Lab Sample ID: MB 880-31669/5-A

Matrix: Solid

Analysis Batch: 31654

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31669

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/07/22 12:02	08/08/22 00:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/07/22 12:02	08/08/22 00:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/07/22 12:02	08/08/22 00:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/07/22 12:02	08/08/22 00:21	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/07/22 12:02	08/08/22 00:21	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/07/22 12:02	08/08/22 00:21	1

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	130		70 - 130	08/07/22 12:02	08/08/22 00:21	1
1,4-Difluorobenzene (Surr)	111		70 - 130	08/07/22 12:02	08/08/22 00:21	1

Lab Sample ID: LCS 880-31669/1-A

Matrix: Solid

Analysis Batch: 31654

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31669

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1009		mg/Kg		101	70 - 130	
Toluene	0.100	0.09893		mg/Kg		99	70 - 130	
Ethylbenzene	0.100	0.09835		mg/Kg		98	70 - 130	
m-Xylene & p-Xylene	0.200	0.1984		mg/Kg		99	70 - 130	
o-Xylene	0.100	0.1126		mg/Kg		113	70 - 130	

LCS LCS

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

Lab Sample ID: LCSD 880-31669/2-A

Matrix: Solid

Analysis Batch: 31654

Client Sample ID: Lab Con	trol Sample Dup
Pre	p Type: Total/NA

Prep Batch: 31669

	Бріке	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1023	mg/Kg		102	70 - 130	1	35

 Client: Ensolum
 Job ID: 890-2709-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

Lab Sample ID: LCSD 880-31669/2-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 31654 Prep Batch: 31669 Spike LCSD LCSD %Rec **RPD** Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit 35 35

Toluene	0.100	0.1004	mg/Kg	100	70 - 130		35
Ethylbenzene	0.100	0.1014	mg/Kg	101	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.2043	mg/Kg	102	70 - 130	3	35
o-Xylene	0.100	0.1134	mg/Kg	113	70 - 130	1	35
LCSD LCSD							

Surrogate%RecoveryQualifierLimits4-Bromofluorobenzene (Surr)10170 - 1301,4-Difluorobenzene (Surr)10170 - 130

Lab Sample ID: 890-2689-A-13-E MS

Client Sample ID: Matrix Spike

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31654 Prep Batch: 31669

Sample	Sample	Spike	MS	MS				%Rec
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
<0.00202	U	0.100	0.1058		mg/Kg		105	70 - 130
<0.00202	U	0.100	0.1129		mg/Kg		112	70 - 130
<0.00202	U	0.100	0.1179		mg/Kg		117	70 - 130
<0.00403	U	0.201	0.2446		mg/Kg		122	70 - 130
<0.00202	U F1	0.100	0.1369	F1	mg/Kg		136	70 - 130
	Result <0.00202 <0.00202 <0.00202 <0.00202 <0.00403	Sample Result Qualifier	Result Qualifier Added	Result Qualifier Added Result <0.00202	Result Qualifier Added Result Qualifier <0.00202	Result Qualifier Added Result Qualifier Unit <0.00202	Result Qualifier Added Result Qualifier Unit D	Result Qualifier Added Result Qualifier Unit D %Rec <0.00202

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 114
 70 - 130

 1,4-Difluorobenzene (Surr)
 95
 70 - 130

Lab Sample ID: 890-2689-A-13-F MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31654 Prep Batch: 31669

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00202	U	0.100	0.1039		mg/Kg		104	70 - 130	2	35
Toluene	<0.00202	U	0.100	0.1120		mg/Kg		112	70 - 130	1	35
Ethylbenzene	<0.00202	U	0.100	0.1218		mg/Kg		122	70 - 130	3	35
m-Xylene & p-Xylene	<0.00403	U	0.200	0.2532		mg/Kg		126	70 - 130	3	35
o-Xylene	<0.00202	U F1	0.100	0.1413	F1	mg/Kg		141	70 - 130	3	35

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 120
 70 - 130

 1,4-Difluorobenzene (Surr)
 94
 70 - 130

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

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

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 31531 Prep Batch: 31555

MB MB

 Analyte
 Result
 Qualifier
 RL
 Unit
 D
 Prepared
 Analyzed
 Dil Factoria

 Gasoline Range Organics
 <50.0</td>
 U
 50.0
 mg/Kg
 08/05/22 09:50
 08/05/22 20:48
 1

 (GRO)-C6-C10
 Eurofins Carlsbad

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Client: Ensolum Job ID: 890-2709-1 SDG: 03E1558063 Project/Site: JRU DI1

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

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

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

Analysis Batch: 31531

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31555

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

MB MB

MR MR

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

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31555

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

LCS LCS

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

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

Matrix: Solid

Matrix: Solid

Analysis Batch: 31531

Analysis Batch: 31531

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

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

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

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

Matrix: Solid

Analysis Batch: 31531

Released to Imaging: 11/30/2022 3:43:27 PM

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31555

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

C10-C28)

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

Client: Ensolum Job ID: 890-2709-1 Project/Site: JRU DI1 SDG: 03E1558063

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

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

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

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

C10-C28)

MSD MSD

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

Method: 300.0 - Anions, Ion Chromatography

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

Matrix: Solid

Analysis Batch: 31937

мв мв

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

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

Analysis Batch: 31937

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

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

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

	Sample	Sample	Spike	IVIS	M2				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	198	F1	250	448.2		mg/Kg		100	90 - 110	

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

Matrix: Solid

Analysis Batch: 31937

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

Eurofins Carlsbad

Prep Type: Soluble

QC Association Summary

Client: Ensolum Job ID: 890-2709-1 Project/Site: JRU DI1 SDG: 03E1558063

GC VOA

Prep Batch: 31602	
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31602/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 31654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2709-1	PH02	Total/NA	Solid	8021B	31669
MB 880-31602/5-A	Method Blank	Total/NA	Solid	8021B	31602
MB 880-31669/5-A	Method Blank	Total/NA	Solid	8021B	31669
LCS 880-31669/1-A	Lab Control Sample	Total/NA	Solid	8021B	31669
LCSD 880-31669/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31669
890-2689-A-13-E MS	Matrix Spike	Total/NA	Solid	8021B	31669
890-2689-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31669

Prep Batch: 31669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2709-1	PH02	Total/NA	Solid	5035	_
MB 880-31669/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31669/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31669/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2689-A-13-E MS	Matrix Spike	Total/NA	Solid	5035	
890-2689-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2709-1	PH02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 31531

Lab Sample ID 890-2709-1	Client Sample ID PH02	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 31555
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015B NM	31555
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31555
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31555
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	31555
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31555

Prep Batch: 31555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2709-1	PH02	Total/NA	Solid	8015NM Prep	
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2709-1	PH02	Total/NA	Solid	8015 NM	

QC Association Summary

 Client: Ensolum
 Job ID: 890-2709-1

 Project/Site: JRU DI1
 SDG: 03E1558063

HPLC/IC

Leach Batch: 31559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2709-1	PH02	Soluble	Solid	DI Leach	
MB 880-31559/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2709-1	PH02	Soluble	Solid	300.0	31559
MB 880-31559/1-A	Method Blank	Soluble	Solid	300.0	31559
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	300.0	31559
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31559
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	31559
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31559

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Lab Chronicle

Client: Ensolum Job ID: 890-2709-1 Project/Site: JRU DI1 SDG: 03E1558063

Client Sample ID: PH02

Date Received: 08/02/22 15:53

Lab Sample ID: 890-2709-1 Date Collected: 08/02/22 11:00 Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	31669	08/07/22 12:02	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31654	08/08/22 08:12	EL	EET MID
Total/NA	Analysis	Total BTEX		1			31810	08/08/22 16:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			31753	08/08/22 11:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31555	08/05/22 09:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31531	08/06/22 00:04	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	31559	08/05/22 10:29	CH	EET MID
Soluble	Analysis	300.0		1			31937	08/12/22 07:28	AJ	EET MID

Laboratory References:

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

Accreditation/Certification Summary

 Client: Ensolum
 Job ID: 890-2709-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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		IELAP T104704400-22-24		06-30-23	
The following englytes	and the street and the state of a contract that				
the agency does not of	• '	it the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for	
,	• '	t the laboratory is not certifi Matrix	ed by the governing authority. This list ma	ay include analytes for	
the agency does not of	fer certification.	•	, , ,	ay include analytes for	

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Method Summary

Job ID: 890-2709-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

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: JRU DI1 Job ID: 890-2709-1 SDG: 03E1558063

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Depth

 890-2709-1
 PH02
 Solid
 08/02/22 11:00
 08/02/22 15:53
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Chain of Custody

			Hobb	Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	oad, NM (575) 988-3199	W	www.xenco.com Page	1 of 1
Project Manager: Ta	Tacoma Morrissey		Bill to: (if different)	t) Garrett Green			Con	S
	Ensolum		Company Name:			Program: UST/PST	Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund [RRC Superfund
	3122 National Parks Hwy	lwy	Address:		eet	State of Project:		1
le ZIP:	Carlsbad, NM 88220		City, State ZIP:	Carlsbad, NM 88220	20	Reporting: Level II	Reporting: Level II	TRRP Level IV
	303-887-2946		Email: tmorrissey@ensolum.com	nsolum.com		Deliverables: EDD	ADaPT (Other:
Project Name:	JRU DI 1		Turn Around		ANALYSIS R	REQUEST	Pres	Preservative Codes
Project Number:	03E1558063		☑ Routine ☐ Rush	Code			None: NO	DI Water: H ₂ O
Project Location:			Due Date:				Cool: Cool	
Sampler's Name:	Conner Shore		TAT starts the day received by		_		HCL: HC	HNO ₃ : HN
PO#			the lab, if received by 4:30pm	rs			H ₂ S0 ₄ : H ₂	NaOH: Na
SAMPLE RECEIPT	Temp Blank:	(S) No We	Wet ice: (Yes No	.0)			H₃PO₄; HP	70
Samples Received Intact:	7	<u>a</u>	1	_			NaHSO ₄ : NABIS	NABIS
Cooler Custody Seals:	≺	Correction Factor:					Na ₂ S ₂ O ₃ : NaSO ₃	NaSO ₃
Sample Custody Seals:		Temperature Reading:	ding: 3-2		oad-2709 Chain of C	Custody	Zn Acetati	Zn Acetate+NaOH: Zn
I otal Containers.		Data Time		ORID (801:				
Gample Identification	I Caucia	Sampled	Sampled Comp	Cont CH				
PH02	S	08.02.22 1	1100 0.5' C				Incident I	Incident ID: nAPP2216152113
							Cost Cen	Cost Center: 1082151001
							AFE:	
	7							
1							API: 30-C	API: 30-015-47514
1								
Total 200.7 / 6010 200.8 / 6020:	0 200.8 / 6020: Metal(s) to be analy	8RC	TCLP / SPLP 6010: 8RCRA	CRA Sb As Ba Be C	SbAsBaBeBCdCaCrCoCuFePbMgMnMoNi SbAsBaBeCdCrCoCuPbMnMoNiSeAgTIU	Pb Mg Mn Mo Ni K Se Mo Ni Se Ag TI U	Ag SiO ₂ Na Sr TI Hg: 1631 / 245.1 /	Sn ∪ V Zn 7470 /7471
tice: Signature of this doc	ument and relinguishment	of samples constitutes	s a valid purchase order from	n client company to Eurofins Xe	enco, its affiliates and subcontra	Notice: Signature of this document and religious herent of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions	and conditions	
service. Eurofins Xenco v Eurofins Xenco. A minimu	sument and relinquishment will be liable only for the co um charge of \$86.00 will be	or samples constitutes ost of samples and shall applied to each projec	I not assume any responsibilities and a charge of \$5 for each	lity for any losses or expenses in sample submitted to Eurofins	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from their company to cumina Activo, as animate and a service and of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the cellent if such losse 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 to	police: Signature of this document and relinquistiment of samples constitutes a valid purchase order from company to Eurofina Xenco, its animace and account of the control of service. Eurofina 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.	viously negotiated.	
Relinquished by: (Signature)	Signature)	Received by: (Signature)	(Signature)	Date/Time	Relinquished by: (Signature)	ature)	Received by: (Signature)	Date/Time
		au Ch		8-2-22 1563	2			
8		love Civit		8-2-22 156	4			
		K						

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-2709-1 SDG Number: 03E1558063

List Source: Eurofins Carlsbad

Login Number: 2709 List Number: 1 Creator: Clifton, Cloe

Question Answer Comment

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or

tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate

HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs

Containers requiring zero headspace have no headspace or bubble is

<6mm (1/4").

Eurofins Carlsbad

Released to Imaging: 11/30/2022 3:43:27 PM

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2709-1 SDG Number: 03E1558063

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

Creator: Rodriguez, Leticia

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

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<6mm (1/4").

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2711-1

Laboratory Sample Delivery Group: 03E1558063

Client Project/Site: JRU DI1

For:

eurofins

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

MAMER

Authorized for release by: 8/12/2022 7:59:24 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Have a Question?

------ LINKS ------

Review your project results through

EOL

Visit us at: www.eurofinsus.com/Env

Released to Imaging: 11/30/2022 3:43:27 PM

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

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

Client: Ensolum
Project/Site: JRU DI1
Laboratory Job ID: 890-2711-1
SDG: 03E1558063

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Definitions/Glossary

Job ID: 890-2711-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

Qualifiers

GC VOA

Qualifier **Qualifier Description**

Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description** F1 MS and/or MSD recovery exceeds control limits. S1-Surrogate recovery exceeds control limits, low biased.

U Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier **Qualifier Description**

MS and/or MSD recovery exceeds control limits.

U Indicates the analyte was analyzed for but not detected.

Glossary

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

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

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

DFR Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor**

DL Detection Limit (DoD/DOE)

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

Decision Level Concentration (Radiochemistry) DLC

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

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

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

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present PQL Practical Quantitation Limit

PRES Presumptive

QC **Quality Control** RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

Case Narrative

 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Job ID: 890-2711-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2711-1

Receipt

The sample was received on 8/2/2022 3:53 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 3.0°C

GC VOA

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

GC Semi VOA

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

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

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31559 and analytical batch 880-31937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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Matrix: Solid

Lab Sample ID: 890-2711-1

Client Sample Results

 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Client Sample ID: PH02

Date Collected: 08/02/22 13:05 Date Received: 08/02/22 15:53

Sample Depth: 5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/09/22 08:41	08/10/22 03:55	
Toluene	<0.00199	U	0.00199	mg/Kg		08/09/22 08:41	08/10/22 03:55	•
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/09/22 08:41	08/10/22 03:55	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/09/22 08:41	08/10/22 03:55	
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/09/22 08:41	08/10/22 03:55	•
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/09/22 08:41	08/10/22 03:55	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	113		70 - 130			08/09/22 08:41	08/10/22 03:55	-
1,4-Difluorobenzene (Surr)	110		70 - 130			08/09/22 08:41	08/10/22 03:55	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			08/10/22 10:12	1
Method: 8015 NM - Diesel Range	•							
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/08/22 11:58	1
Method: 8015B NM - Diesel Rang	• • •	, , ,						
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/06/22 00:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/06/22 00:25	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/06/22 00:25	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	78		70 - 130			08/05/22 09:50	08/06/22 00:25	1
o-Terphenyl	94		70 - 130			08/05/22 09:50	08/06/22 00:25	
Method: 300.0 - Anions, Ion Chro	0							
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		50.0	mg/Kg			08/12/22 07:37	10

Surrogate Summary

 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Rec
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-17597-A-2-F MS	Matrix Spike	96	103	
880-17597-A-2-G MSD	Matrix Spike Duplicate	112	95	
890-2711-1	PH02	113	110	
LCS 880-31834/1-A	Lab Control Sample	99	108	
LCSD 880-31834/2-A	Lab Control Sample Dup	114	102	
MB 880-31717/5-A	Method Blank	96	95	
MB 880-31834/5-A	Method Blank	98	93	

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

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2706-A-1-B MS	Matrix Spike	68 S1-	67 S1-	
890-2706-A-1-C MSD	Matrix Spike Duplicate	63 S1-	65 S1-	
890-2711-1	PH02	78	94	
LCS 880-31555/2-A	Lab Control Sample	89	96	
LCSD 880-31555/3-A	Lab Control Sample Dup	89	97	
MB 880-31555/1-A	Method Blank	83	101	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2711-1 Project/Site: JRU DI1 SDG: 03E1558063

Method: 8021B - Volatile Organic Compounds (GC)

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31717

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

MB MB

MR MR

<0.00200 U

Result Qualifier

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	08/08/22 10:13	08/09/22 16:06	1
1,4-Difluorobenzene (Surr)	95		70 - 130	08/08/22 10:13	08/09/22 16:06	1

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

Matrix: Solid

Analyte

Benzene

Analysis Batch: 31851

Client Sample ID: Method Blank

Analyzed

08/10/22 02:52

Prepared

08/09/22 08:41

Prep Type: Total/NA

Prep Batch: 31834

Dil Fac

Toluene <0.00200 U 0.00200 mg/Kg 08/09/22 08:41 08/10/22 02:52 08/10/22 02:52 Ethylbenzene <0.00200 U 0.00200 mg/Kg 08/09/22 08:41 <0.00400 U 0.00400 08/09/22 08:41 08/10/22 02:52 m-Xylene & p-Xylene mg/Kg <0.00200 U 0.00200 08/09/22 08:41 08/10/22 02:52 o-Xylene mg/Kg Xylenes, Total <0.00400 U 0.00400 mg/Kg 08/09/22 08:41 08/10/22 02:52

0.00200

RL

Unit

mg/Kg

MB MB

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

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 31834

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

LCS LCS

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

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

Matrix: Solid

Analysis Batch: 31851

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

Prep Batch: 31834

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

QC Sample Results

 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

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

Client Sample ID: Lab Control Sample Dup
Matrix: Solid

Prep Type: Total/NA
Analysis Batch: 31851

Prep Batch: 31834

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Toluene	0.100	0.1079		mg/Kg		108	70 - 130	12	35	
Ethylbenzene	0.100	0.09720		mg/Kg		97	70 - 130	22	35	
m-Xylene & p-Xylene	0.200	0.2134		mg/Kg		107	70 - 130	27	35	
o-Xvlene	0.100	0.1062		ma/Ka		106	70 - 130	24	35	

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

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

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31851 Prep Batch: 31834

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

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

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

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31851 Prep Batch: 31834

Tananyone Battern Crock											• • • • •
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00200	U	0.100	0.08278		mg/Kg		82	70 - 130	24	35
Toluene	<0.00200	U	0.100	0.1051		mg/Kg		105	70 - 130	2	35
Ethylbenzene	<0.00200	U	0.100	0.09458		mg/Kg		94	70 - 130	11	35
m-Xylene & p-Xylene	<0.00399	U	0.201	0.2062		mg/Kg		103	70 - 130	16	35
o-Xylene	<0.00200	U	0.100	0.1025		mg/Kg		101	70 - 130	16	35

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

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

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

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 31531 Prep Batch: 31555

MB MB

 Analyte
 Result
 Qualifier
 RL
 Unit
 D
 Prepared
 Analyzed
 Dil Fac

 Gasoline Range Organics
 <50.0</td>
 U
 50.0
 mg/Kg
 08/05/22 09:50
 08/05/22 20:48
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 (GRO)-C6-C10
 Eurofins Carlsbad

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 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

Lab Sample ID: MB 880-31555/1-A	Client Sample ID: Method Blank
Matrix: Solid	Prep Type: Total/NA
Analysis Batch: 31531	Prep Batch: 31555
MB MB	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
C10-C28) OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 09:50	08/05/22 20:48	1
	МВ	МВ						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130			08/05/22 09:50	08/05/22 20:48	1
o-Terphenyl	101		70 - 130			08/05/22 09:50	08/05/22 20:48	1

Lab Sample ID: LCS 880-31	555/2-A						Client	Sample	ID: Lab Control Sample
Matrix: Solid									Prep Type: Total/N/
Analysis Batch: 31531									Prep Batch: 3155
			Spike	LCS	LCS				%Rec
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics			1000	885.3		mg/Kg		89	70 - 130
(GRO)-C6-C10									
Diesel Range Organics (Over			1000	874.1		mg/Kg		87	70 - 130
C10-C28)									
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	89		70 - 130						
o-Terphenyl	96		70 - 130						

Lab Sample ID: LCSD 880-31555/3-A	ab Sample ID: LCSD 880-31555/3-A Clier						Lab Contro	ol Sampl	e Dup
Matrix: Solid							Prep ⁻	Гуре: То	tal/NA
Analysis Batch: 31531							Prep	Batch:	31555
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	855.1		mg/Kg		86	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	871.0		mg/Kg		87	70 - 130	0	20

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

Lab Sample ID: 890-2706-A- Matrix: Solid Analysis Batch: 31531	-1-B MS							Client	Prep	9: Matrix Spike Type: Total/NA 10: Batch: 31555
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	833.2		mg/Kg		81	70 - 130	
Diesel Range Organics (Over C10-C28)	92.2	F1	999	666.4	F1	mg/Kg		57	70 - 130	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	68	S1-	70 - 130							
o-Terphenyl	67	S1-	70 - 130							

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Lurolinis Garisbaa

Client: Ensolum Job ID: 890-2711-1 Project/Site: JRU DI1 SDG: 03E1558063

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

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

Matrix: Solid

Prep Type: Total/NA Analysis Batch: 31531 Prep Batch: 31555

	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	850.8		mg/Kg		83	70 - 130	2	20
(GRO)-C6-C10											
Diesel Range Organics (Over	92.2	F1	999	643.6	F1	mg/Kg		55	70 - 130	3	20
C10-C28)											

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

Method: 300.0 - Anions, Ion Chromatography

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

Matrix: Solid

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	2/17 1		ma/Ka		90	90 110		20	

Lab Sample ID: 890-2706-A-3-C MS Client Sample ID: Matrix Spike

Matrix: Solid

Analysis Batch: 31937

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	198	F1	250	448 2		ma/Ka		100	90 110	

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

Matrix: Solid

Analysis Batch: 31937

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

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Prep Type: Soluble

Prep Type: Soluble

QC Association Summary

Client: Ensolum Job ID: 890-2711-1 Project/Site: JRU DI1 SDG: 03E1558063

GC VOA

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

Prep Batch: 31834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2711-1	PH02	Total/NA	Solid	5035	
MB 880-31834/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31834/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31834/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17597-A-2-F MS	Matrix Spike	Total/NA	Solid	5035	
880-17597-A-2-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2711-1	PH02	Total/NA	Solid	8021B	31834
MB 880-31717/5-A	Method Blank	Total/NA	Solid	8021B	31717
MB 880-31834/5-A	Method Blank	Total/NA	Solid	8021B	31834
LCS 880-31834/1-A	Lab Control Sample	Total/NA	Solid	8021B	31834
LCSD 880-31834/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31834
880-17597-A-2-F MS	Matrix Spike	Total/NA	Solid	8021B	31834
880-17597-A-2-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31834

Analysis Batch: 31900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2711-1	PH02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 31531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2711-1	PH02	Total/NA	Solid	8015B NM	31555
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015B NM	31555
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31555
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31555
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	31555
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31555

Prep Batch: 31555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2711-1	PH02	Total/NA	Solid	8015NM Prep	
MB 880-31555/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31555/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31555/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2706-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2706-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2711-1	PH02	Total/NA	Solid	8015 NM	

QC Association Summary

 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

HPLC/IC

Leach Batch: 31559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2711-1	PH02	Soluble	Solid	DI Leach	
MB 880-31559/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2711-1	PH02	Soluble	Solid	300.0	31559
MB 880-31559/1-A	Method Blank	Soluble	Solid	300.0	31559
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	300.0	31559
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31559
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	31559
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31559

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Lab Chronicle

 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Client Sample ID: PH02

Date Collected: 08/02/22 13:05 Date Received: 08/02/22 15:53 Lab Sample ID: 890-2711-1

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	31834	08/09/22 08:41	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31851	08/10/22 03:55	MR	EET MID
Total/NA	Analysis	Total BTEX		1			31900	08/10/22 10:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			31754	08/08/22 11:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31555	08/05/22 09:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31531	08/06/22 00:25	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	31559	08/05/22 10:29	CH	EET MID
Soluble	Analysis	300.0		10			31937	08/12/22 07:37	AJ	EET MID

Laboratory References:

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

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Accreditation/Certification Summary

 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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 englytes	and the street and the state of a contract that			
the agency does not of	• '	it the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for
,	• '	t the laboratory is not certifi Matrix	ed by the governing authority. This list ma	ay include analytes for
the agency does not of	fer certification.	•	, , ,	ay include analytes for

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Method Summary

 Client: Ensolum
 Job ID: 890-2711-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

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Sample Summary

Client: Ensolum Project/Site: JRU DI1 Job ID: 890-2711-1

SDG: 03E1558063

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2711-1	PH02	Solid	08/02/22 13:05	08/02/22 15:53	5

Relinquished by: (Signature)

Received by: (Signature)

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1553

Revised Date: 08/25/2020 Rev. 2020 2

eurofins **Environment Testing**

Project Manager:

Tacoma Morrissey

Bill to: (if different)

Company Name:

Company Name:

Ensolum

Address:

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

Project Name: Project Number: Project Location: Sampler's Name: O #: SAMPLE RECEIPT Samples Received Intact: Cooler Custody Seals: Year Sample Containers: Fotal Containers: Fotal Containers: Project Number: Sample Identification	JRU DI 1 O3E1558063 Conner Shon Temp Blank: Yes No WA Yes No WA Matrix	Due I TAT s the la No Wes cometer ID: \(\) third Temper te Tited Temper	e: 3	Comp Parameters Code: CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021	ANALYSIS REQUEST 890-2711 Chain of Custody	Preservative Codes None: NO DI Water: H ₂ O Cool: Cool MeOH: Me HCL: HC HNO ₃ : HN H ₂ SO ₄ : H ₂ NaOH: Na H ₃ PO ₄ : HP NaHSO ₄ : NASO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAPC Sample Comments
Sample Identific	Matrix		Depth	# of Cont		BTEX (Sample Comments
PH02	S 08	08.02.22 1305	05 5'	C 1	×	×		Incident ID: nAPP2216152113
								Cost Center: 1082151001
		1		-				
								AFE:
								API: 30-015-47514
1								
1					H			
Total 200.7 / 6010 Circle Method(s) and N	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	8RCRA TCLI	13PPM Texas 11 P / SPLP 6010: 8R(s 11 Al Sb 8RCRA Sb	As Ba As Ba	Be B C	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Aq	Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn Ni Se Ag Ti U Hg: 1631/245.1/7470/7471
lotice: Signature of this docur f service. Eurofins Xenco wil	ment and relinquishment of sa Il be liable only for the cost of n charge of \$85.00 will be appl	imples constitutes samples and shall i	a valid purchase orde not assume any respo	r from client com insibility for any li	pany to El	urofins Xenc expenses inc Eurofins Xe	olice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$6 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	onditions the control ly negotiated.

City, State ZIP:

Carlsbad, NM 88220 3122 National Parks Hwy

City, State ZIP:

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

Level IV

State of Project:

Program: UST/PST 🗌 PRP 🗌 Brownfields 🗌 RRC 🔲 Superfund 📗

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Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-2711-1 SDG Number: 03E1558063

List Source: Eurofins Carlsbad

Login Number: 2711 List Number: 1 Creator: Clifton, Cloe

Question Answer Comment

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate

HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested

MS/MSDs

Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").

Eurofins Carlsbad

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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2711-1

SDG Number: 03E1558063

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

List Number: 2 Creator: Rodriguez, Leticia

Login Number: 2711

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").

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2712-1

Laboratory Sample Delivery Group: 03E1558063

Client Project/Site: JRU DI1

For:

eurofins

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

MAMER

Authorized for release by: 8/12/2022 7:59:56 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Review your project results through

------ LINKS ------

Have a Question?



Visit us at:

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

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Client: Ensolum
Project/Site: JRU DI1
Laboratory Job ID: 890-2712-1
SDG: 03E1558063

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Definitions/Glossary

Job ID: 890-2712-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

Qualifiers

GC VOA

Qualifier **Qualifier Description**

Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description**

*1 LCS/LCSD RPD exceeds control limits.

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

HPLC/IC

Qualifier **Qualifier Description**

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

Glossary

MCL

QC

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

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

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

DFR Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor**

DL Detection Limit (DoD/DOE)

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

Decision Level Concentration (Radiochemistry) DLC

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

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

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

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present PQL Practical Quantitation Limit

PRES Presumptive

Quality Control RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

Case Narrative

 Client: Ensolum
 Job ID: 890-2712-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Job ID: 890-2712-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2712-1

Receipt

The sample was received on 8/2/2022 3:53 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 3.0° C

GC VOA

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-31570/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-31570 and analytical batch 880-31633 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31559 and analytical batch 880-31937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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Matrix: Solid

Lab Sample ID: 890-2712-1

Client Sample Results

 Client: Ensolum
 Job ID: 890-2712-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Client Sample ID: PH03

Date Collected: 08/02/22 13:30 Date Received: 08/02/22 15:53

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 08:41	08/10/22 04:16	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 04:16	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 04:16	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		08/09/22 08:41	08/10/22 04:16	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 04:16	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/09/22 08:41	08/10/22 04:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			08/09/22 08:41	08/10/22 04:16	1
1,4-Difluorobenzene (Surr)	113		70 - 130			08/09/22 08:41	08/10/22 04:16	1
- Method: Total BTEX - Total BTE)	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			08/10/22 10:12	1
- Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			08/08/22 11:44	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	<49.9	U *1	49.9	mg/Kg		08/05/22 10:50	08/06/22 12:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/05/22 10:50	08/06/22 12:00	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/05/22 10:50	08/06/22 12:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			08/05/22 10:50	08/06/22 12:00	1
o-Terphenyl	110		70 - 130			08/05/22 10:50	08/06/22 12:00	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	444		24.9	mg/Kg			08/12/22 07:46	

Surrogate Summary

Job ID: 890-2712-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

_			
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-17597-A-2-F MS	Matrix Spike	96	103
880-17597-A-2-G MSD	Matrix Spike Duplicate	112	95
890-2712-1	PH03	105	113
LCS 880-31834/1-A	Lab Control Sample	99	108
LCSD 880-31834/2-A	Lab Control Sample Dup	114	102
MB 880-31717/5-A	Method Blank	96	95
MB 880-31834/5-A	Method Blank	98	93
Surrogate Legend	Would Blank	00	00

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 R
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2712-1	PH03	96	110	
890-2712-1 MS	PH03	77	85	
890-2712-1 MSD	PH03	92	101	
LCS 880-31570/2-A	Lab Control Sample	135 S1+	133 S1+	
LCSD 880-31570/3-A	Lab Control Sample Dup	111	130	
MB 880-31570/1-A	Method Blank	91	105	
Surrogate Legend				
1CO = 1-Chlorooctane				

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2712-1 SDG: 03E1558063 Project/Site: JRU DI1

Method: 8021B - Volatile Organic Compounds (GC)

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31717

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/08/22 10:13	08/09/22 16:06	1

мв мв

мв мв

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96	70 - 130	08/08/22 10:1	3 08/09/22 16:06	1
1,4-Difluorobenzene (Surr)	95	70 - 130	08/08/22 10:1	3 08/09/22 16:06	1

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

Matrix: Solid

Analysis Batch: 31851

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

Prep Batch: 31834

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

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Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130	08	3/09/22 08:41	08/10/22 02:52	1
1,4-Difluorobenzene (Surr)	93		70 - 130	08	8/09/22 08:41	08/10/22 02:52	1

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 31834

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

LCS LCS

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

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 31834

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

QC Sample Results

 Client: Ensolum
 Job ID: 890-2712-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

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

Matrix: Solid

Analysis Batch: 31851

Spike

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

Prep Batch: 31834

RPD

%Rec RPD

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Toluene	0.100	0.1079		mg/Kg		108	70 - 130	12	35
Ethylbenzene	0.100	0.09720		mg/Kg		97	70 - 130	22	35
m-Xylene & p-Xylene	0.200	0.2134		mg/Kg		107	70 - 130	27	35
o-Xylene	0.100	0.1062		mg/Kg		106	70 - 130	24	35

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

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

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31851 Prep Batch: 31834

ple Sample	Spike	MS	MS				%Rec	
ult Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
200 U	0.0998	0.1058		mg/Kg		105	70 - 130	
200 U	0.0998	0.1035		mg/Kg		104	70 - 130	
200 U	0.0998	0.08434		mg/Kg		85	70 - 130	
399 U	0.200	0.1748		mg/Kg		88	70 - 130	
200 U	0.0998	0.08766		mg/Kg		87	70 - 130	
2 2 2	nple Sample suit Qualifier 2000 U 2000 U 3999 U 2000 U	Sult Qualifier Added 200 U 0.0998 200 U 0.0998 200 U 0.0998 399 U 0.200	sult Qualifier Added Result 200 U 0.0998 0.1058 200 U 0.0998 0.1035 200 U 0.0998 0.08434 399 U 0.200 0.1748	Sult 200 U Qualifier Added	sult Qualifier Added Result Qualifier Unit 200 U 0.0998 0.1058 mg/Kg 200 U 0.0998 0.1035 mg/Kg 200 U 0.0998 0.08434 mg/Kg 399 U 0.200 0.1748 mg/Kg	sult 200 Qualifier Added 200 Result 200 Qualifier 200 Unit 200 Description 200 U 0.0998 0.1058 mg/Kg mg/Kg 200 U 0.0998 0.1035 mg/Kg mg/Kg 200 U 0.0998 0.08434 mg/Kg mg/Kg 399 U 0.200 0.1748 mg/Kg	sult 200 Qualifier Added 200 Result 200 Qualifier 200 Unit 200 D 3 %Rec 200 200 U 0.0998 0.1058 mg/Kg 105 200 U 0.0998 0.1035 mg/Kg 104 200 U 0.0998 0.08434 mg/Kg 85 399 U 0.200 0.1748 mg/Kg 88	sult Qualifier Added Description Result Qualifier Unit Unit Unit Unit Unit Unit Unit Unit

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene (Surr)
 96
 70 - 130

 1,4-Difluorobenzene (Surr)
 103
 70 - 130

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

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31851 Prep Batch: 31834

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00200	U	0.100	0.08278		mg/Kg		82	70 - 130	24	35
Toluene	<0.00200	U	0.100	0.1051		mg/Kg		105	70 - 130	2	35
Ethylbenzene	<0.00200	U	0.100	0.09458		mg/Kg		94	70 - 130	11	35
m-Xylene & p-Xylene	<0.00399	U	0.201	0.2062		mg/Kg		103	70 - 130	16	35
o-Xylene	<0.00200	U	0.100	0.1025		mg/Kg		101	70 - 130	16	35

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

MSD MSD

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

Lab Sample ID: MB 880-31570/1-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 31633

MB MB

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac

 Analyte
 Result
 Qualifier
 RL
 Unit
 D
 Prepared
 Analyzed
 Dil Factoria

 Gasoline Range Organics
 <50.0</td>
 U
 50.0
 mg/Kg
 08/05/22 10:50
 08/06/22 10:56
 1

 (GRO)-C6-C10
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o-Terphenyl

 Client: Ensolum
 Job ID: 890-2712-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

105

Lab Sample ID: MB 880-31570/1-A

Matrix: Solid

Analysis Batch: 31633

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31570

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/05/22 10:50	08/06/22 10:56	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 10:50	08/06/22 10:56	1
	МВ	МВ						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130			08/05/22 10:50	08/06/22 10:56	1

70 - 130

Lab Sample ID: LCS 880-31 Matrix: Solid	5/U/Z-A						Cilent	Sample	ID: Lab Control Sam Prep Type: Total/
Analysis Batch: 31633									Prep Batch: 31
7			Spike	LCS	LCS				%Rec
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10			1000	1077		mg/Kg		108	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1004		mg/Kg		100	70 - 130
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	135	S1+	70 - 130						
o-Terphenyl	133	S1+	70 - 130						

Lab Sample ID: LCSD 880-31570/3-A Matrix: Solid Analysis Batch: 31633				Client	Sam	ple ID: I		ol Sample Type: Tot Batch:	tal/NA
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	860.0	*1	mg/Kg		86	70 - 130	22	20
Diesel Range Organics (Over	1000	967.6		mg/Kg		97	70 - 130	4	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	111		70 - 130
o-Terphenyl	130		70 - 130

Lab Sample ID: 890-2712-1 MS									Client Samp	le ID: PH03
Matrix: Solid									Prep Typ	e: Total/NA
Analysis Batch: 31633									Prep B	atch: 31570
	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 *1	999	994.7		mg/Kg		100	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.9	U	999	709.9		mg/Kg		71	70 - 130	
	MS	MS								
Surrogate	%Pocovory	Qualifier	l imite							

 Surrogate
 %Recovery
 Qualifier
 Limits

 1-Chlorooctane
 77
 70 - 130

 o-Terphenyl
 85
 70 - 130

Job ID: 890-2712-1 Client: Ensolum Project/Site: JRU DI1 SDG: 03E1558063

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

Lab Sample ID: 890-2712-1 MSD **Client Sample ID: PH03 Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 31633

Prep Batch: 31570 Sample Sample Spike MSD MSD RPD Result Qualifier Limit Analyte Added Result Qualifier Unit %Rec Limits RPD Gasoline Range Organics <49.9 U *1 999 840.2 mg/Kg 84 70 - 130 17 20 (GRO)-C6-C10 Diesel Range Organics (Over 999 843.5 84 70 - 130<49.9 U mg/Kg 17 20

C10-C28)

MSD MSD %Recovery Qualifier Limits Surrogate 1-Chlorooctane 70 - 130 92 o-Terphenyl 101 70 - 130

Method: 300.0 - Anions, Ion Chromatography

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

Matrix: Solid

Analysis Batch: 31937

MB MB

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

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

Matrix: Solid

Analysis Batch: 31937

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

Lab Sample ID: LCSD 880-31559/3-A

Matrix: Solid

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

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

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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

QC Association Summary

 Client: Ensolum
 Job ID: 890-2712-1

 Project/Site: JRU DI1
 SDG: 03E1558063

GC VOA

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

Prep Batch: 31834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2712-1	PH03	Total/NA	Solid	5035	
MB 880-31834/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31834/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31834/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17597-A-2-F MS	Matrix Spike	Total/NA	Solid	5035	
880-17597-A-2-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2712-1	PH03	Total/NA	Solid	8021B	31834
MB 880-31717/5-A	Method Blank	Total/NA	Solid	8021B	31717
MB 880-31834/5-A	Method Blank	Total/NA	Solid	8021B	31834
LCS 880-31834/1-A	Lab Control Sample	Total/NA	Solid	8021B	31834
LCSD 880-31834/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31834
880-17597-A-2-F MS	Matrix Spike	Total/NA	Solid	8021B	31834
880-17597-A-2-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31834

Analysis Batch: 31901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2712-1	PH03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 31570

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2712-1	PH03	Total/NA	Solid	8015NM Prep	
MB 880-31570/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31570/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31570/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2712-1 MS	PH03	Total/NA	Solid	8015NM Prep	
890-2712-1 MSD	PH03	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2712-1	PH03	Total/NA	Solid	8015B NM	31570
MB 880-31570/1-A	Method Blank	Total/NA	Solid	8015B NM	31570
LCS 880-31570/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31570
LCSD 880-31570/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31570
890-2712-1 MS	PH03	Total/NA	Solid	8015B NM	31570
890-2712-1 MSD	PH03	Total/NA	Solid	8015B NM	31570

Analysis Batch: 31742

Released to Imaging: 11/30/2022 3:43:27 PM

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2712-1	PH03	Total/NA	Solid	8015 NM	

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QC Association Summary

 Client: Ensolum
 Job ID: 890-2712-1

 Project/Site: JRU DI1
 SDG: 03E1558063

HPLC/IC

Leach Batch: 31559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2712-1	PH03	Soluble	Solid	DI Leach	
MB 880-31559/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2712-1	PH03	Soluble	Solid	300.0	31559
MB 880-31559/1-A	Method Blank	Soluble	Solid	300.0	31559
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	300.0	31559
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31559
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	31559
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31559

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Lab Chronicle

Client: Ensolum Job ID: 890-2712-1 Project/Site: JRU DI1 SDG: 03E1558063

Client Sample ID: PH03

Date Received: 08/02/22 15:53

Lab Sample ID: 890-2712-1 Date Collected: 08/02/22 13:30

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	31834	08/09/22 08:41	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31851	08/10/22 04:16	MR	EET MID
Total/NA	Analysis	Total BTEX		1			31901	08/10/22 10:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			31742	08/08/22 11:44	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	31570	08/05/22 10:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31633	08/06/22 12:00	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	31559	08/05/22 10:29	СН	EET MID
Soluble	Analysis	300.0		5			31937	08/12/22 07:46	AJ	EET MID

Laboratory References:

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

Accreditation/Certification Summary

 Client: Ensolum
 Job ID: 890-2712-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Laboratory: Eurofins Midland

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

Authority	_ ·		Program		Identification Number	Expiration Date
Texas			T104704400-22-24	06-30-23		
The following analytes	are included in this renert hu	it the leberatory is not contiffi	to all booking and committees as all a side of Their Booking.			
the agency does not of		at the laboratory is not certil	ied by the governing authority. This list ma	ay include analytes for v		
,		Matrix	led by the governing authority. This list ma	ay include analytes for v		
the agency does not of	fer certification.	•	, , ,	ay include analytes for v		

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Method Summary

 Client: Ensolum
 Job ID: 890-2712-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

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Sample Summary

Client: Ensolum Project/Site: JRU DI1 Job ID: 890-2712-1 SDG: 03E1558063

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2712-1	PH03	Solid	08/02/22 13:30	08/02/22 15:53	0.5

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Project Manager: Company Name:

Tacoma Morrissey

Bill to: (if different) Company Name:

XTO Energy

Garrett Green

Ensolum

City, State ZIP:

303-887-2946 Carlsbad, NM 88220 3122 National Parks Hwy

Email: tmorrissey@ensolum.com

City, State ZIP:

Carlsbad, NM 88220 3104 E. Green Street

ANALYSIS

Chain of Custody

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

Work Order No:

	www.xenco.com Page of
	Work Order Comments
	Program: UST/PST 🔲 PRP 🗌 Brownfields 🔲 RRC 🔲 Superfund 🗎
	State of Project:
	Reporting: Level II
Ш	Deliverables: EDD
<u>m</u>	REQUEST Preservative Codes

			U U U V 4	2 2 2	X		8	Mr CPI			
	received by (biginature)	Kelliquation by. (Signature)	400	Date/ Inte	1	ire)	Received by: (Signature	, Receive	1	ignature)	Relinquished by: (Signature)
Date/Time	Deceived by: (Signature)	Polinarijshod by: (Signatura)									
	andard terms and conditions umstances beyond the control ced unless previously negotiated.	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$6 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	urofins Xenc expenses inc Eurofins Xe	company to E ny losses or submitted to	m client o	rchase order fro le any responsib rge of \$5 for eac	stitutes a valld pur d shall not assum project and a cha	of samples cons st of samples an applied to each	quishment for the cos 5.00 will be	ment and relin	otice: Signature of this docu service, Eurofins Xenco w Eurofins Xenco, A minimu
7470 / 7471	TI U Hg: 1631 / 245.1 / 7470 / 747	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U)a Be Cd	Sb As B	₹CRA	TCLP / SPLP 6010: 8RCRA	TCLP / SP	zed	e analy:	Metal(s) to I	Circle Method(s) and Metal(s) to be analyzed
Sn U V Zn	Ph Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U	B Cd Ca Cr Co Cu Fe Pb Mg Mn N	Be	Sb As Ba		M Texas 11 Al	8RCRA 13PPM	8	5020:	200.8 / 6020:	Total 200.7 / 6010
				-							11
											1 mg
API: 30-015-47514	API: 30-0										1
									-		
	AFE:								\		7
								/			
Cost Center: 1082151001	Cost Cer						\				
						1					
Incident ID: nAPP2216152113	Incident		×	×	7	0.5' C	1330 0	08.02.22	S		PH03
Sample Comments	Sar		втех	CHLC	Cont	Depth Comp	Time I	Date Sampled	Matrix	ation	Sample Identification
NaOH+ASCORDIC ACIO. SAFC	NaOH+A:			-		30	emperature:	Corrected Temperature			otal Containers:
An Acetate+NaOH; An	Zn Acetai	_				3	Reading:	Temperature Reading:	NIA	Yes No	Sample Custody Seals:
NaSO ₃	Na ₂ S ₂ O ₃ : NaSO ₃	890-2/12 Chain of Custody		PA:	Pa	-0.2		Correction Factor:	XIA)	Yes No	Cooler Custody Seals:
NABIS	NaHSO4: NABIS			300	arar	FCO MW	1	Thermometer ID:	No	: (Yes	Samples Received Intact:
÷	H ₃ PO ₄ : HP).0)	nete	Yes No	Wet Ice:	(Yes No	Blank:	Temp Blank:	SAMPLE RECEIPT
NaOH: Na	H ₂ S0 ₄ : H ₂				rs	/ed by 4:30pm	the lab, if received by 4:30pm				PO #
	HCL: HC					lay received by	TAT starts the day received by	е	Conner Shore	Con	Sampler's Name:
<u>_</u>	Cool: Cool		1.0.T. II				Due Date:				Project Location:
O DI Water: H ₂ O	None: NO				Code	Rush	☑ Routine		03E1558063	03E	Project Number:
Preservative Codes	Pre	ANALYSIS REQUEST				round	Turn Around		JRU DI 1	누	Project Name:

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-2712-1 SDG Number: 03E1558063

List Source: Eurofins Carlsbad

Login Number: 2712 List Number: 1 Creator: Clifton, Cloe

Question Answer Comment

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or

tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate

HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested

MS/MSDs

Containers requiring zero headspace have no headspace or bubble is

<6mm (1/4").

Eurofins Carlsbad

Released to Imaging: 11/30/2022 3:43:27 PM

Login Sample Receipt Checklist

Client: Ensolum

SDG Nu

Job Number: 890-2712-1 SDG Number: 03E1558063

Login Number: 2712
List Source: Eurofins Midland
List Number: 2
List Creation: 08/04/22 10:22 AM

Creator: Rodriguez, Leticia

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

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<6mm (1/4").



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2713-1

Laboratory Sample Delivery Group: 03E1558063

Client Project/Site: JRU DI1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

JURAMER

Authorized for release by 8/12/2022 8:00:47 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Authorized for release by:

results through
EOL

Have a Question?

Ask

------ LINKS ------

Review your project

Visit us at:

www.eurofinsus.com/Env
Released to Imaging: 11/30/2022 3:43:27 PM

signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

This report has been electronically signed and authorized by the signatory. Electronic

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1 2

Client: Ensolum
Project/Site: JRU DI1
Laboratory Job ID: 890-2713-1
SDG: 03E1558063

Table of Contents

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Definitions/Glossary

 Client: Ensolum
 Job ID: 890-2713-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Qualifiers

GC VOA

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

*1 LCS/LCSD RPD exceeds control limits.

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

HPLC/IC

F1 MS and/or MSD recovery exceeds control limits.

U Indicates the analyte was analyzed for but not detected.

Glossary

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

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

%R Percent Recovery

CFL Contains Free Liquid

CFU Colony Forming Unit

CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present
PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

Eurofins Carlsbad

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Case Narrative

 Client: Ensolum
 Job ID: 890-2713-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Job ID: 890-2713-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2713-1

Receipt

The sample was received on 8/2/2022 3:53 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 3.0°C

GC VOA

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-31570/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-31570 and analytical batch 880-31633 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31559 and analytical batch 880-31937 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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Matrix: Solid

Lab Sample ID: 890-2713-1

Client Sample Results

Client: Ensolum Job ID: 890-2713-1 Project/Site: JRU DI1 SDG: 03E1558063

Client Sample ID: PH03

Date Collected: 08/02/22 13:40 Date Received: 08/02/22 15:53

Sample Depth: 5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 11:59	-
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 11:59	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 11:59	
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		08/09/22 08:41	08/10/22 11:59	
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 11:59	
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		08/09/22 08:41	08/10/22 11:59	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)			70 - 130			08/09/22 08:41	08/10/22 11:59	
1,4-Difluorobenzene (Surr)	105		70 - 130			08/09/22 08:41	08/10/22 11:59	
Method: Total BTEX - Total BTEX	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	< 0.00401	U	0.00401	mg/Kg			08/10/22 16:51	
Method: 8015 NM - Diesel Range								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
	Result <49.9		RL 49.9	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 08/08/22 11:44	
Total TPH	<49.9	U			<u>D</u>	Prepared		
Total TPH Method: 8015B NM - Diesel Rang	<49.9 ge Organics (D	U			<u>D</u> 	Prepared Prepared		
Total TPH Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	<49.9 ge Organics (D	RO) (GC) Qualifier	49.9	mg/Kg		<u> </u>	08/08/22 11:44	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	<49.9 ge Organics (D Result	COOL (GC) Qualifier U *1	49.9	mg/Kg		Prepared	08/08/22 11:44 Analyzed	Dil Fa
Total TPH Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<49.9 ge Organics (D Result <49.9	RO) (GC) Qualifier U*1	49.9 RL 49.9	mg/Kg Unit mg/Kg		Prepared 08/05/22 10:50	08/08/22 11:44 Analyzed 08/06/22 13:05	Dil Fa
Total TPH Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<49.9 ge Organics (D) Result <49.9 <49.9	CONTROL (GC) Qualifier U*1 U	49.9 RL 49.9 49.9	mg/Kg Unit mg/Kg mg/Kg		Prepared 08/05/22 10:50 08/05/22 10:50	08/08/22 11:44 Analyzed 08/06/22 13:05 08/06/22 13:05	Dil Fa
Total TPH Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	<49.9 ge Organics (D) Result <49.9 <49.9	CONTROL (GC) Qualifier U*1 U	49.9 RL 49.9 49.9 49.9	mg/Kg Unit mg/Kg mg/Kg		Prepared 08/05/22 10:50 08/05/22 10:50 08/05/22 10:50	08/08/22 11:44 Analyzed 08/06/22 13:05 08/06/22 13:05	Dil Fac
Total TPH Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	49.9 ge Organics (D) Result <49.9 <49.9 <49.9 %Recovery	CONTROL (GC) Qualifier U*1 U	49.9 RL 49.9 49.9 49.9 Limits	mg/Kg Unit mg/Kg mg/Kg		Prepared 08/05/22 10:50 08/05/22 10:50 08/05/22 10:50 Prepared	08/08/22 11:44 Analyzed 08/06/22 13:05 08/06/22 13:05 08/06/22 13:05 Analyzed	Dil Fa
Analyte Total TPH 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	49.9 ge Organics (D) Result <49.9 <49.9 <49.9 <8ecovery 92 103	CONTROLUCION (CONTROLUCION (CO	49.9 RL 49.9 49.9 49.9 Limits 70 - 130	mg/Kg Unit mg/Kg mg/Kg		Prepared 08/05/22 10:50 08/05/22 10:50 08/05/22 10:50 Prepared 08/05/22 10:50	08/08/22 11:44 Analyzed 08/06/22 13:05 08/06/22 13:05 Analyzed 08/06/22 13:05	Dil Fac
Total TPH Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl	49.9 ge Organics (D Result <49.9 <49.9 <80.9 %Recovery 92 103 omatography -	CONTROLUCION (CONTROLUCION (CO	49.9 RL 49.9 49.9 49.9 Limits 70 - 130	mg/Kg Unit mg/Kg mg/Kg		Prepared 08/05/22 10:50 08/05/22 10:50 08/05/22 10:50 Prepared 08/05/22 10:50	08/08/22 11:44 Analyzed 08/06/22 13:05 08/06/22 13:05 Analyzed 08/06/22 13:05	Dil Fac

Surrogate Summary

 Client: Ensolum
 Job ID: 890-2713-1

 Project/Site: JRU DI1
 SDG: 03E1558063

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-17597-A-2-F MS	Matrix Spike	96	103	
880-17597-A-2-G MSD	Matrix Spike Duplicate	112	95	
890-2713-1	PH03	111	105	
LCS 880-31834/1-A	Lab Control Sample	99	108	
LCSD 880-31834/2-A	Lab Control Sample Dup	114	102	
MB 880-31717/5-A	Method Blank	96	95	
MB 880-31834/5-A	Method Blank	98	93	

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2712-A-1-C MS	Matrix Spike	77	85	
890-2712-A-1-D MSD	Matrix Spike Duplicate	92	101	
890-2713-1	PH03	92	103	
LCS 880-31570/2-A	Lab Control Sample	135 S1+	133 S1+	
LCSD 880-31570/3-A	Lab Control Sample Dup	111	130	
MB 880-31570/1-A	Method Blank	91	105	
Surrogate Legend				

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2713-1 SDG: 03E1558063 Project/Site: JRU DI1

Method: 8021B - Volatile Organic Compounds (GC)

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31717

	МВ	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/08/22 10:13	08/09/22 16:06	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/08/22 10:13	08/09/22 16:06	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed
4-Bromofluorobenzene (Surr)	96		70 - 130	08/08/22 10:13	08/09/22 16:06
1,4-Difluorobenzene (Surr)	95		70 - 130	08/08/22 10:13	08/09/22 16:06

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31834

Dil Fac

	мв	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 02:52	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 02:52	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 02:52	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/09/22 08:41	08/10/22 02:52	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/09/22 08:41	08/10/22 02:52	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/09/22 08:41	08/10/22 02:52	1

мв мв

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

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 31834

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

LCS LCS

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

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

Matrix: Solid

Analysis Batch: 31851

Client Sample ID:	: Lab Control Sample Dup)
	Dean Time, Tetal/N/	

Prep Type: Total/NA

Prep Batch: 31834

	эріке		.เรอม			%Rec		KPD	
Analyte	Added	Result Q	Qualifier Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.08862	mg/l		89	70 - 130	12	35	

QC Sample Results

 Client: Ensolum
 Job ID: 890-2713-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

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

Matrix: Solid

Analysis Batch: 31851

Spike

LCSD LCSD

Added

Result Qualifier

Unit D %Rec Limits RPD Limit

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Toluene	0.100	0.1079		mg/Kg		108	70 - 130	12	35
Ethylbenzene	0.100	0.09720		mg/Kg		97	70 - 130	22	35
m-Xylene & p-Xylene	0.200	0.2134		mg/Kg		107	70 - 130	27	35
o-Xylene	0.100	0.1062		mg/Kg		106	70 - 130	24	35

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

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

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31851 Prep Batch: 31834

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

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

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

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 31851 Prep Batch: 31834

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00200	U	0.100	0.08278		mg/Kg		82	70 - 130	24	35
Toluene	<0.00200	U	0.100	0.1051		mg/Kg		105	70 - 130	2	35
Ethylbenzene	<0.00200	U	0.100	0.09458		mg/Kg		94	70 - 130	11	35
m-Xylene & p-Xylene	<0.00399	U	0.201	0.2062		mg/Kg		103	70 - 130	16	35
o-Xylene	<0.00200	U	0.100	0.1025		mg/Kg		101	70 - 130	16	35

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

MSD MSD

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

Lab Sample ID: MB 880-31570/1-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 31633 Prep Batch: 31570

MB MB

 Analyte
 Result
 Qualifier
 RL
 Unit
 D
 Prepared
 Analyzed
 Dil Fac

 Gasoline Range Organics
 <50.0</td>
 U
 50.0
 mg/Kg
 08/05/22 10:50
 08/06/22 10:56
 1

 (GRO)-C6-C10
 Eurofins Carlsbad

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Client: Ensolum Job ID: 890-2713-1 SDG: 03E1558063 Project/Site: JRU DI1

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

Lab Sample ID: MB 880-31570/1-A

Matrix: Solid

Analysis Batch: 31633

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 31570

	IVID	D MD							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/05/22 10:50	08/06/22 10:56	1	
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/05/22 10:50	08/06/22 10:56	1	

MB MB

	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1-Chlorooctane	91		70 - 130	08/05/22 10:50	08/06/22 10:56	1
l	o-Terphenyl	105		70 - 130	08/05/22 10:50	08/06/22 10:56	1

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 880-31570/2-A **Matrix: Solid** Prep Type: Total/NA

Prep Batch: 31570 Analysis Batch: 31633

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 1077 108 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 1004 100 mg/Kg 70 - 130 C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	135	S1+	70 - 130
o-Terphenyl	133	S1+	70 - 130

Lab Sample ID: LCSD 880-31570/3-A

Matrix: Solid

Analysis Batch: 31633

Prep Type: Total/NA

Prep Batch: 31570

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	860.0	*1	mg/Kg		86	70 - 130	22	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	967.6		mg/Kg		97	70 - 130	4	20	
C10-C28)										

LCSD LCSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 111 70 - 130 o-Terphenyl 130 70 - 130

Lab Sample ID: 890-2712-A-1-C MS

Matrix: Solid

Analysis Batch: 31633

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 31570

	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 *1	999	994.7		mg/Kg		100	70 - 130	
Diesel Range Organics (Over	<49.9	U	999	709.9		mg/Kg		71	70 - 130	

C10-C28)

	IVIS	IVIS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	85		70 - 130

Client: Ensolum Job ID: 890-2713-1 Project/Site: JRU DI1 SDG: 03E1558063

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

Lab Sample ID: 890-2712-A-1-D MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Solid

Prep Type: Total/NA Analysis Batch: 31633 Prep Batch: 31570

	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 *1	999	840.2		mg/Kg		84	70 - 130	17	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<49.9	U	999	843.5		mg/Kg		84	70 - 130	17	20
C10-C28)											

MSD MSD %Recovery Qualifier Limits Surrogate 1-Chlorooctane 70 - 130 92 o-Terphenyl 101 70 - 130

Method: 300.0 - Anions, Ion Chromatography

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

Matrix: Solid

Analysis Batch: 31937

мв мв

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

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

Matrix: Solid

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

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

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

Matrix: Solid

Analysis Batch: 31937

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	198	F1	250	448 2		ma/Ka	_	100	90 110	

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

Released to Imaging: 11/30/2022 3:43:27 PM

Matrix: Solid

Analysis Batch: 31937

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

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Prep Type: Soluble

Prep Type: Soluble

Prep Type: Soluble

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

QC Association Summary

 Client: Ensolum
 Job ID: 890-2713-1

 Project/Site: JRU DI1
 SDG: 03E1558063

GC VOA

Pre	о Ва	itch:	317	17
	P - C		•	• •

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

Prep Batch: 31834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2713-1	PH03	Total/NA	Solid	5035	
MB 880-31834/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31834/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31834/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17597-A-2-F MS	Matrix Spike	Total/NA	Solid	5035	
880-17597-A-2-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2713-1	PH03	Total/NA	Solid	8021B	31834
MB 880-31717/5-A	Method Blank	Total/NA	Solid	8021B	31717
MB 880-31834/5-A	Method Blank	Total/NA	Solid	8021B	31834
LCS 880-31834/1-A	Lab Control Sample	Total/NA	Solid	8021B	31834
LCSD 880-31834/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31834
880-17597-A-2-F MS	Matrix Spike	Total/NA	Solid	8021B	31834
880-17597-A-2-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31834

Analysis Batch: 31930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2713-1	PH03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 31570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2713-1	PH03	Total/NA	Solid	8015NM Prep	
MB 880-31570/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31570/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31570/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2712-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2712-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2713-1	PH03	Total/NA	Solid	8015B NM	31570
MB 880-31570/1-A	Method Blank	Total/NA	Solid	8015B NM	31570
LCS 880-31570/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31570
LCSD 880-31570/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31570
890-2712-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	31570
890-2712-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31570

Analysis Batch: 31743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2713-1	PH03	Total/NA	Solid	8015 NM	

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QC Association Summary

 Client: Ensolum
 Job ID: 890-2713-1

 Project/Site: JRU DI1
 SDG: 03E1558063

HPLC/IC

Leach Batch: 31559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2713-1	PH03	Soluble	Solid	DI Leach	
MB 880-31559/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2713-1	PH03	Soluble	Solid	300.0	31559
MB 880-31559/1-A	Method Blank	Soluble	Solid	300.0	31559
LCS 880-31559/2-A	Lab Control Sample	Soluble	Solid	300.0	31559
LCSD 880-31559/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31559
890-2706-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	31559
890-2706-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31559

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Lab Chronicle

Client: Ensolum Job ID: 890-2713-1 Project/Site: JRU DI1 SDG: 03E1558063

Client Sample ID: PH03

Date Received: 08/02/22 15:53

Lab Sample ID: 890-2713-1 Date Collected: 08/02/22 13:40 Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	31834	08/09/22 08:41	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31851	08/10/22 11:59	MR	EET MID
Total/NA	Analysis	Total BTEX		1			31930	08/10/22 16:51	SM	EET MID
Total/NA	Analysis	8015 NM		1			31743	08/08/22 11:44	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	31570	08/05/22 10:50	DM	EET MID
Total/NA	Analysis	8015B NM		1			31633	08/06/22 13:05	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	31559	08/05/22 10:29	СН	EET MID
Soluble	Analysis	300.0		5			31937	08/12/22 07:55	AJ	EET MID

Laboratory References:

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

Accreditation/Certification Summary

 Client: Ensolum
 Job ID: 890-2713-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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		ELAP	06-30-23	
The following analytes	are included in this report, bu	it the laboratory is not certifi	ed by the governing authority. This list ma	av include analytes for w
the agency does not of	• '	,	od by the governing datherty. The list his	ay molade analytes for w
the agency does not of Analysis Method	• '	Matrix	Analyte	ay morade analytes for w
9 ,	fer certification.	•	, , ,	

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Method Summary

 Client: Ensolum
 Job ID: 890-2713-1

 Project/Site: JRU DI1
 SDG: 03E1558063

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

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Sample Summary

Client: Ensolum Project/Site: JRU DI1 Job ID: 890-2713-1

SDG: 03E1558063

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2713-1	PH03	Solid	08/02/22 13:40	08/02/22 15:53	5

Circle Method(s) a

Relinquished by: (Signature)

Received by: (Signature)

2-22 55

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Revised Date: 08/25/2020 Rev. 2020 2

eurofins :

Xenco

Environment Testing

Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 2-0300

Project Name:

SAMPLE RECE

Samples Received I

Cooler Custody Seal

Sample Custody Sea

Total Containers:

Sampler's Name: Project Location: Project Number: Phone:

Address:

City, State ZIP:

Carlsbad, NM 88220 3122 National Parks Hwy

City, State ZIP:

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

Reporting: Level III | PST/UST | TRRP |

Level IV

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

Work Order Comments

www.xenco.com

Page

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Company Name: Address:

Bill to: (if different)

Project Manager:

Tacoma Morrissey

Company Name:

Ensolum

tice: 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 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 Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiat	Total 200.7 / 6010 200.8 / 6020: ircle Method(s) and Metal(s) to be analyzed			1	1		,					РН03	Sample Identification	otal Containers:	ample Custody Seals:	ooler Custody Seals:	amples Received Intact:	AMPLE RECEIPT	0#	ampler's Name:	roject Location:	roject Number:	roject Name:	hone: 30
cument and relinquis will be liable only for um charge of \$85.00	Metal(s) to be an	Ш							1						Yes No	Yes No (ct: (Yes) No	Temp Blank:		Conner Shore		03E1558063	JRU DI 1	303-887-2946
hment of the cost will be a	io: analyz						1	_				S	Matrix		N	₹				Shore		58063	밀	
samples cor of samples a pplied to eacl							١	/				08.02.22	Date Sampled	Corrected T	Temperature Reading:	Correction Factor:	Thermometer ID:	Yes No	7					
stitutes a valid nd shall not as n project and a	TCLP / SPLP 6010: 8RC	200						1				1340	Time Sampled	Corrected Temperature:	e Reading:	actor:	er ID:	Wet Ice:	the lab, if received by 4:30pm	TAT starts the day received by	Due Date:	Routine	Tur	Emai
d purchase sume any charge of	SPLP 6								1			ΩĪ	Depth		Ø.	,	VM. DO	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ceived by	he day red		Rush	Turn Around	: tmorri
order from responsib \$5 for eac	TCLP / SPLP 6010: 8RCRA								-			ဂ	Grab/ Comp	3	3.0	0	ROOM	No	/ 4:30pm	ceived by		sh	a.	Email: tmorrissey@ensolum.com
m client o ility for a h sample	₽ ≥	2								1			# of Cont	Jo		P	arai	nete	ers			Code		nsolur
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condition the consisty nego	Hg: 1631/2	Da Si												_						_				
itrol otlated.	631 /																							ADaPT \Box
	5 5	邻				API: 30-015-47514		AFE:		Cost Center:		Incident ID: I	Sample	NaOH+Ascon	Zn Acetate+NaOH: ∠n	Na ₂ S ₂ U ₃ : NaSU ₃	NaHSO4: NABIS	H₃PO₄: HP	H ₂ SU ₄ : H ₂	HCL: HC	Cool: Cool	None: NO	Preserv	Other:
	17471	TI Sp II V Zp				47514				Cost Center: 1082151001		Incident ID: nAPP2216152113	Sample Comments	NaOH+Ascorbic Acid: SAPC	laCH: Zn	90 ₃	- W		NaOH: Na	HNO3: HN	MeOH: Me	DI Water: H ₂ O	Preservative Codes	er:
	11/20	//	0.2	2.2	. 40		7 P	1.7					Pa	ge	17	of	19)						

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-2713-1 SDG Number: 03E1558063

List Source: Eurofins Carlsbad

Login Number: 2713 List Number: 1 Creator: Clifton, Cloe

Question Answer Comment

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate

HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested

MS/MSDs

Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").

Eurofins Carlsbad

Released to Imaging: 11/30/2022 3:43:27 PM

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2713-1 SDG Number: 03E1558063

Login Number: 2713
List Source: Eurofins Midland
List Number: 2
List Creation: 08/04/22 10:22 AM

Creator: Rodriguez, Leticia

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

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APPENDIX E

NMOCD Notifications

Collins, Melanie

From: Collins, Melanie

Sent: Tuesday, May 31, 2022 1:02 PM

To:ocd.enviro@state.nm.us; Hamlet, Robert, EMNRD; mike.bratcher@state.nm.usCc:Jarrett, Ryan; McSpadden, Wes; Pennington, Shelby G; DelawareSpills /SM

Subject: 24-hour notification - JRU DI 1A release date 5-30-22

All,

This is notification of a small fire that occurred Monday, May 30, 2022, at the JRU DI 1A Battery near the coordinates listed below. Fire was extinguished and fire department was notified. Details will be provided with a form C-141. Please contact us with any questions or concerns.

32.37987, -103.88675

Thank you,

Melanie Collins

SSHE Technician

An ExxonMobil Subsidiary 6401 Holiday Hill Rd, Bldg 5 Midland, TX 79707 432-218-3709 From: Aimee Cole

Tacoma Morrissey; Kalei Jennings

Subject: FW: XTO - Sampling Notification (week of 6/13/22 - 6/17/22) (updated)

Date: Monday, June 13, 2022 12:22:23 PM

Attachments: image001.png

image002.png image003.png image004.png

See below for your records.

Thanks!



Aimee Cole

Senior Managing Scientist 720-384-7365 Ensolum, LLC

From: Baker, Adrian <adrian.baker@exxonmobil.com>

Sent: Monday, June 13, 2022 9:39 AM

To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet,

Robert, EMNRD <Robert.Hamlet@state.nm.us>; Nobui, Jennifer, EMNRD

<Jennifer.Nobui@state.nm.us>

Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Aimee Cole <acole@ensolum.com>

Subject: XTO - Sampling Notification (week of 6/13/22 - 6/17/22) (updated)

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of June 13, 2022.

Monday, June 13th

• JRU 106/ nAPP2212344322

Tuesday, June 14th

- PLU South Frac Pond / nAPP2211150068
- JRU DI2 702H & 707H / nAPP2211654411 & nAPP2208349430
- JRU DI 1 Liner Delineation / Release Date May 30, 2022

Wednesday, June 15th

PLU Big Sinks 25 Battery / nAPP2213148421

th

Thursday, June 16

• PLU 28 Big Sinks 127H / nAPP2210143304

Friday, June 17th

• PLU 28 Big Sinks 127H / nAPP2210143304

Adrian Baker

Environmental Coordinator Permian Business Unit

XTO Energy Inc. 6401 N. Holiday Hill Dr. Midland, Tx 79707 Mobile:(432)-236-3808 adrian.baker@exxonmobil.com From: Green, Garrett J

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

Cc: <u>Tacoma Morrissey</u>; <u>DelawareSpills /SM</u>

Subject: XTO - Sampling Notification (week of 7/18/22 - 7/22/22)

Date: Friday, July 15, 2022 2:22:18 PM

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of July 18, 2022.

Tuesday

- BEU 5E Han Solo 114H/ nAPP2209041753
- BEU 5E Han Solo 105H/ nAPP2209731445

Wednesday

- BEU 5E Han Solo 114H/ nAPP2209041753
- BEU 5E Han Solo 105H/ nAPP2209731445

Thursday

- PLU 18 TWR 155H/ nAPP2214735696
- JRU DI 1 Liner Delineation/ nAPP2216152113

Friday

- PLU 18 TWR 155H/ nAPP2214735696

Thank you,

Garrett Green

Environmental Coordinator Delaware Business Unit (575) 200-0729

Garrett.Green@ExxonMobil.com

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

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 138563

CONDITIONS

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	138563
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

Cre	eated By	Condition	Condition Date
rh	namlet	XTO's deferral requests to complete final remediation during any future major construction/alteration or final plugging/abandonment, whichever occurs first. Ensolum and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The area requested for deferral is "BH01". The area has been delineated and documented in the report. At this time, OCD approves this request. The Deferral Request and C-141 will be accepted for record and marked accordingly. The release will remain open in OCD database files and reflect an open environmental issue. This is a Federal site and will require like approval from BLM.	11/30/2022