



April 18, 2023

#### **New Mexico Oil Conservation Division**

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

Re: Deferral Request Addendum
Zia Hills 19-1
Incident Number NAPP2215827276
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of ConocoPhillips Company (COP), has prepared this *Deferral Request Addendum* to document assessment, excavation, and soil sampling activities performed at the Zia Hills 19-1 (Site) as outlined in an approved *Remediation Work Plan (RWP)*, dated February 21, 2023. 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 crude oil and produced water on pad. Based on assessment and excavation activities, as well as laboratory analytical results from soil sampling events, COP is submitting this *Deferral Request Addendum* for Incident Number NAPP2215827276.

All of the release details regarding the incident, Site characterization, and remediation conducted can be referenced in the original *Deferral Request* submitted on November 21, 2022. On December 19, 2022, the New Mexico Oil Conservation Division (NMOCD) denied the original *Deferral Request* for Incident Number NAPP2215827276 for the following reason:

Deferral Request Denied. The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. Please submit dtw data before OCD can evaluate the defferal. Please submit a revised Deferral Request by January 19, 2023.

Although the denial requested submittal of a deferral request, it was not possible to coordinate land access, permit a boring with the New Mexico Office of the State Enginner (NMOSE), schedule fieldwork with limited drillers' availability, then collect and analyze new data within 30 days. The *RWP* was submitted in lieu of a deferral request. The *RWP* proposed installation of a boring to investigate depth to water and confirm the Site Closure Criteria.

Zia Hills 19-1 Deferral Request Addendum Incident Number NAPP221587276



#### **DEPTH TO WATER DETERMINATION**

On February 15, 2023, a borehole (BH01) was advanced to a depth of 110 feet below ground surface (bgs) via air rotary drill rig. The borehole was located approximately 0.25 miles southeast of the Site and is depicted on Figure 1. A field geologist logged and described soils continuously. The borehole lithologic/soil sampling log is included in Appendix B. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 100 feet bgs. The borehole was properly abandoned using hydrated bentonite chips.

#### **DEFERRAL REQUEST**

Remediation and delineation activities at the Site were summarized in the *Deferral Request* submitted to the NMOCD on November 21, 2022. Due to shallow subsurface active pipelines within the remediation area, COP requested a deferral for the remaining impacted soil.

COP is requesting a deferral of final remediation due to the presence of active production equipment and subsurface pipelines in the areas that require additional remediation. COP safety policy restricts soil disturbing activities to within a 2-foot radius of any on-site production equipment or active pipelines. This safety policy is established to protect workers and reduce the likelihood of compromising the foundation of the production equipment or pipelines. The remaining impacted soil is limited to an area directly above active pipelines and deepening the excavation in these areas to remove the remaining impacted soil would poses a risk to human health and the environment if one of these pipelines was damaged. The impacted soil remaining in place is delineated laterally by soil samples SS06 through SS09 and vertically by soil samples SS10 and SS10A. Ensolum estimates a maximum of 100 cubic yards of total petroleum hydrocarbon (TPH) and chloride impacted soil remain in place above the active pipelines assuming a maximum 3-foot depth of impact. COP intends to apply Micro-Blaze® to promote biodegradation of the hydrocarbon impacts within the release area.

COP does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was determined to be greater than 100 feet bgs and the release remained on the active well pad.

Based on the presence of active pipelines within the release area and active production equipment in the immediate vicinity of the release area, COP requests deferral of final remediation for Incident Number NAPP2215827276 until final reclamation of the well pad or major construction, whichever comes first.



Zia Hills 19-1 Deferral Request Addendum Incident Number NAPP221587276



If you have any questions or comments, please contact Ms. Kalei Jennings at (817) 683-2503 or kjennings@ensolum.com.

Sincerely, **Ensolum, LLC** 

Hadlie Green
Project Geologist

Daniel R. Moir, PG Senior Managing Geologist

cc: Jacob Laird, ConocoPhillips Company

Bureau of Land Management

#### Attachments:

Figure 1 Site Receptor Map
Figure 2 Delineation Soil Sample Locations
Figure 3 Excavation Soil Sample Locations

Figure 4 Deferral Area

Table 1 Soil Sample Analytical Results

Appendix A Final C-141

Appendix B Referenced Well Records

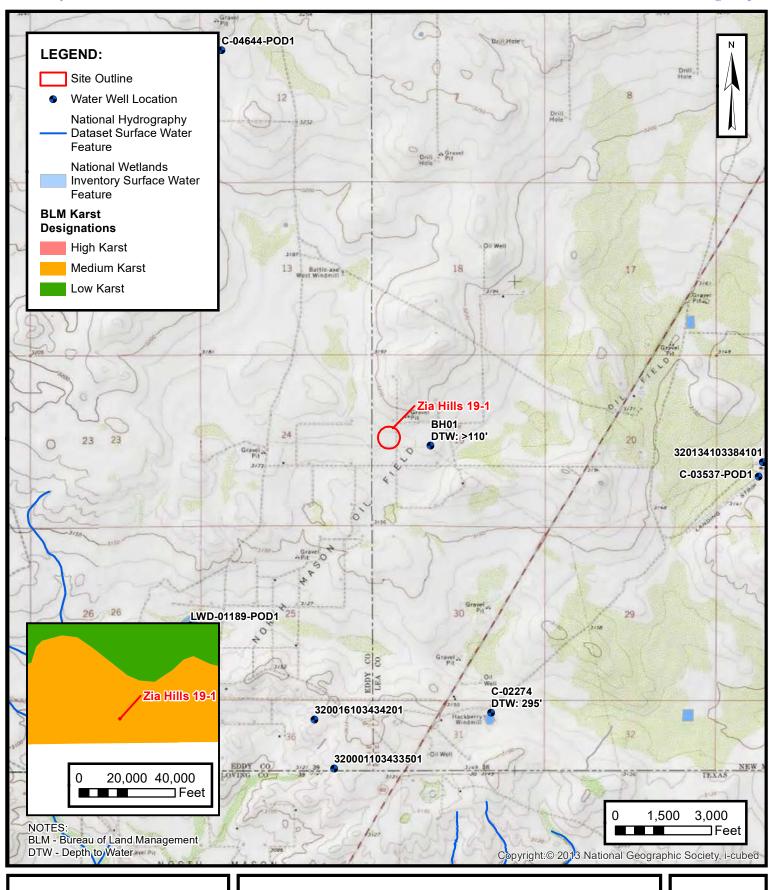
Appendix C Photographic Log

Appendix D Laboratory Analytical Reports

Appendix E NMOCD Notifications



**FIGURES** 

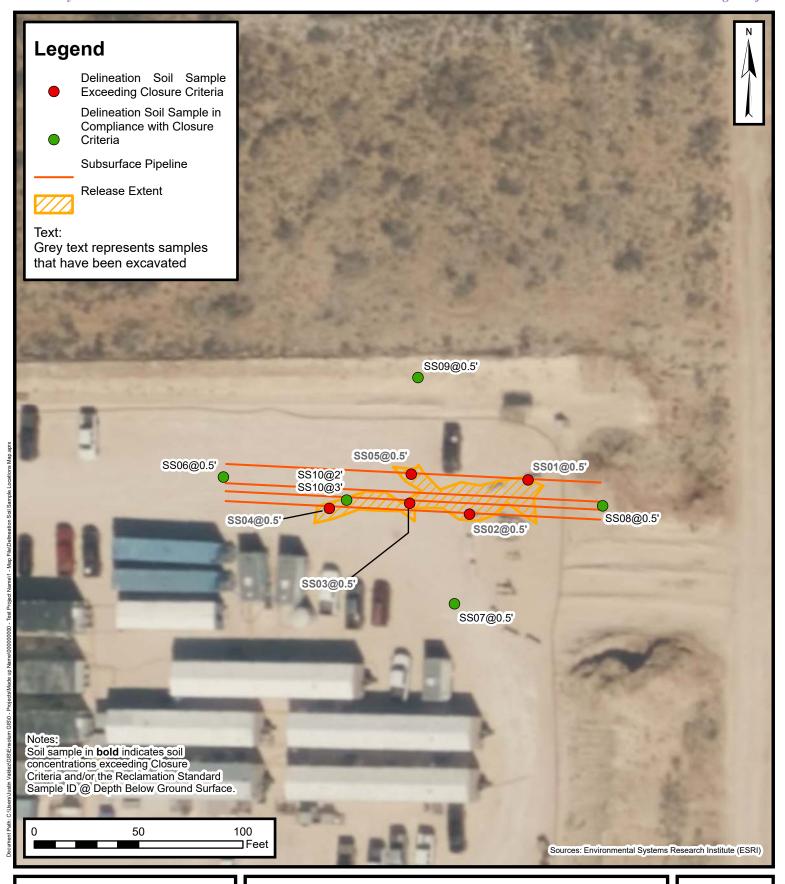




#### SITE RECEPTOR MAP

ConocoPhillips Company ZIA HILLS 19-1 Incident Number NAPP2215827276 Unit E Sec 19 T26S R32E Lea County, New Mexico **FIGURE** 

1



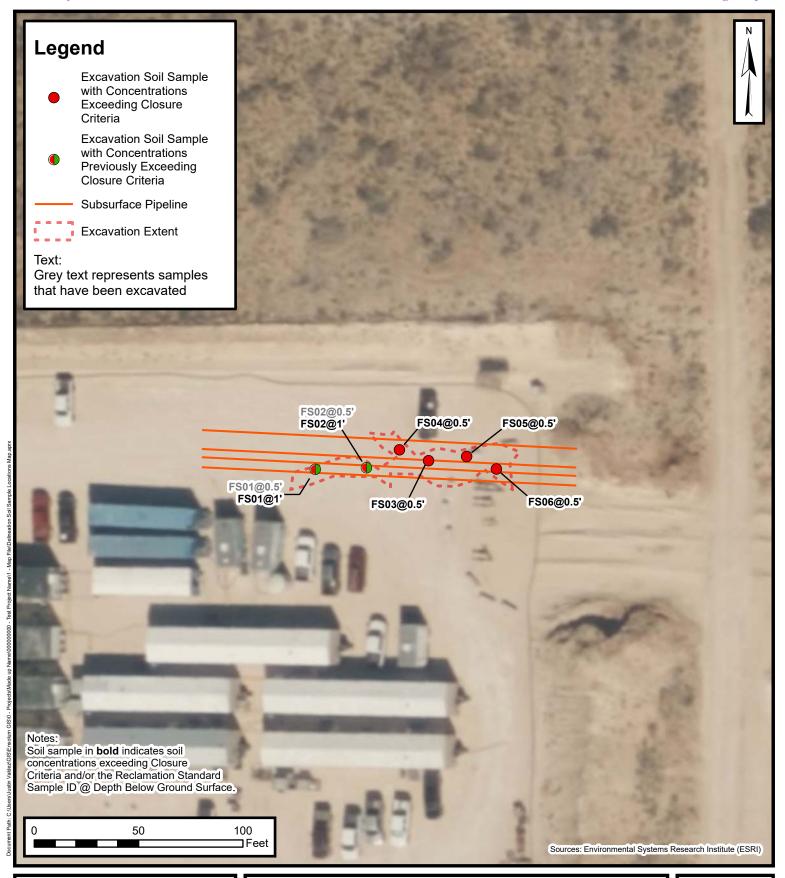


# **Delineation Soil Sample Locations**

ConocoPhillips Company
Zia Hills 19-1
NAPP2215827276
Unit E Sec 19 T26S R32E
Lea County, New Mexico

FIGURE 2

Released to Imaging: 6/21/2023 2:22:52 PM



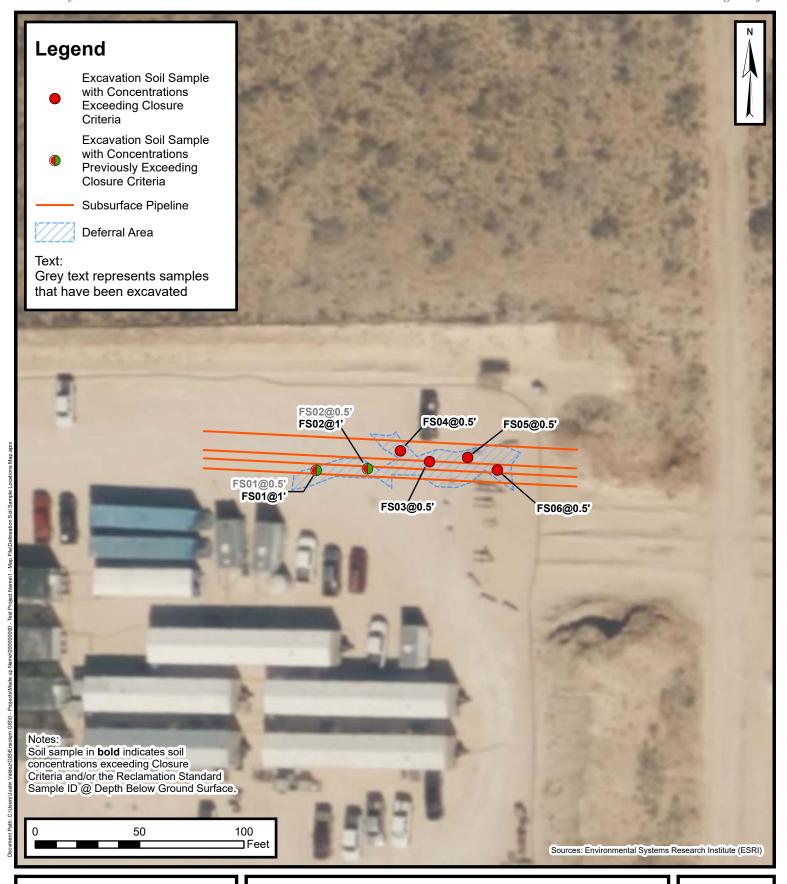


# **Excavation Soil Sample Locations**

ConocoPhillips Company
Zia Hills 19-1
NAPP2215827276
Unit F Sec 19 T26S R32F

Unit E Sec 19 T26S R32E Lea County, New Mexico FIGURE 3

Released to Imaging: 6/21/2023 2:22:52 PM





# **Deferral Area**

ConocoPhillips Company Zia Hills 19-1 NAPP2215827276 Unit E Sec 19 T26S R32E

Unit E Sec 19 T26S R32E Lea County, New Mexico FIGURE

4



**TABLES** 



#### TABLE 1 **SOIL SAMPLE ANALYTICAL RESULTS** Zia Hills 19-1 **ConocoPhillips Company** Lea County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I C	losure Criteria (N	IMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Preliminary	Assessment So	il Samples				
SS01	5/31/2022	0.5	0.942	50.0	3,610	17,100	3,250	20,710	24,000	581
SS02	5/31/2022	0.5	1.54	274	4,450	12,900	2,300	17,350	19,700	604
SS03	5/31/2022	0.5	0.0125	0.303	8,890	22,900	4,340	31,790	36,100	912
SS04	5/31/2022	0.5	5.65	436	10,100	24,400	4,550	34,500	39,100	1,410
SS05	5/31/2022	0.5	4.67	317	6,260	19,700	<499	25,960	26,000	603
				Delir	neation Soil Samp	oles				
SS06	5/31/2022	0.5	0.00684	0.196	<50.0	<50.0	<50.0	<50.0	<50.0	374
SS07	5/31/2022	0.5	<0.00200	0.00871	<50.0	<50.0	<50.0	<50.0	<50.0	491
SS08	5/31/2022	0.5	<0.00199	0.143	<50.0	<50.0	<50.0	<50.0	<50.0	321
SS09	5/31/2022	0.5	<0.00199	0.0684	<49.9	<49.9	<49.9	<49.9	<49.9	371
SS10	11/1/2022	2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	987
SS10A	11/1/2022	3	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	75.2
				Exca	avation Soil Samp	oles				
FS01	07/14/2022	0.5	< 0.200	0.849	78.6	3,790	336	3,869	4,200	265
FS01A	09/14/2022	1	<0.00200	0.525	157	624	102	781	883	209
FS02	07/14/2022	0.5	< 0.0399	1.01	<49.9	2,750	298	2,750	3,050	919
FS02A	09/14/2022	1	<0.00201	0.747	140	722	119	862	981	203
FS03	07/18/2022	0.5	<0.0994	14.5	407	5,440	490	5,847	6,340	344
FS04	07/18/2022	0.5	<0.0996	26.6	531	2,990	259	3,521	3,780	32.3
FS05	07/18/2022	0.5	<0.100	19.9	619	6,620	535	7,239	7,770	145
FS06	07/18/2022	0.5	<0.101	5.43	122	4,170	354	4,292	4,650	89.4

#### Notes:

bgs: below ground surface BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

DRO: Diesel Range Organics GRO: Gasoline Range Organics

mg/kg: milligrams per kilogram NMOCD: New Mexico Oil Conservation Division

NE: not established ORO: Oil Range Organics TPH: Total Petroleum Hydrocarbon

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation standard where applicable.

Grey text represents samples that have been excavated



**APPENDIX A** 

Final C-141

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	NAPP2215827276
District RP	
Facility ID	fAPP2129428702
Application ID	

# **Release Notification**

# **Responsible Party**

Responsible Party	ConocoPhillips Company	OGRID	217817
Contact Name	Charles Beauvais	Contact Telephone	(575) 988-2043
Contact email	Charles.R.Beauvais@ConocoPhillips.com	Incident # (assigned by OCD)	NAPP2215827276
Contact mailing address	600 West Illinois Avenue, Midlar	nd, Texas 79701	

			Location	of R	telease Soui	rce		
Latitude	32.028	53			Longitude	-103.7	72126	
			(NAD 83 in dec	cimal de	grees to 5 decimal p	laces)		
Site Name		Zia Hills 19-	·1		Site Type	Tan	k Battery	
Date Release	Discovered	May 23, 20	22		API# (if applical	ble)		
Unit Letter	Section	Township	Range		County			
Е	19	26S	32E		Lea			
Surface Owne	r: State	■ Federal □ Tr	ibal	Vame:				)

## Nature and Volume of Release

Material	(s) Released (Select all that apply and attach calculations or specific	justification for the volumes provided below)
Crude Oil	Volume Released (bbls) 18	Volume Recovered (bbls) 18
Produced Water	Volume Released (bbls) 26	Volume Recovered (bbls) 25
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	■ Yes □ No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
		•

Cause of Release

The release was caused by a leak in a flow line due to corrosion.

The release was on the pad.

Evaluation will be made at the site to determine if we may commence remediation immediately or delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

Received by OCD: 4/24/2023/11:36:26 MM State of New Mexico
Page 2 Oil Conservation Division

Page 13eof 156

Incident ID	NAPP2215827276
District RP	
Facility ID	fAPP2129428702
Application ID	

Was this a major	If YES, for what reason(s) does the responsible	party consider this a major release?
release as defined by	This release was greater than 25 ba	rrels.
19.15.29.7(A) NMAC?		
■ Yes □ No		
If YES, was immediate no	notice given to the OCD? By whom? To whom?	When and by what means (phone, email, etc)?
		a email on May 23, 2022 at 4:14 pm to
blm_nm_cfo_spill@	blm.gov and ocd.enviro@state.nm.us	5.
	Initial Respo	onse
The responsible	-	ss they could create a safety hazard that would result in injury
The responsible p		s they could create a sujety hazara that would result in injury
The source of the rele	ease has been stopped.	
	as been secured to protect human health and the e	nvironment.
Released materials ha	ave been contained via the use of berms or dikes,	absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and man	naged appropriately.
If all the actions described	ed above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NM	AAC the responsible party may commence remed	iation immediately after discovery of a release. If remediation
has begun, please attach	a narrative of actions to date. If remedial effort	s have been successfully completed or if the release occurred
within a lined containmer	nt area (see 19.15.29.11(A)(5)(a) NMAC), please	attach all information needed for closure evaluation.
		f my knowledge and understand that pursuant to OCD rules and ons and perform corrective actions for releases which may endanger
public health or the environs	ment. The acceptance of a C-141 report by the OCD d	oes not relieve the operator of liability should their operations have
		groundwater, surface water, human health or the environment. In nsibility for compliance with any other federal, state, or local laws
and/or regulations.		issoring for comphance with any other federal, state, or local laws
Printed Name Brittar	ny N. Esparza Ti	tle: Environmental Technician
- Part	tom Dopara	
Signature:		ate: 6/7/2022 dephone: (432) 221-0398
email: Brittany.Espar	za@ConocoPnillips.com Te	lephone: (432) 221-0398
OCD O		
OCD Only		
Received by:Jocelyr	n Harimon Dat	e:06/07/2022

# L48 Spill Volume Estimate Form

Received by OCD: 6/7/2022 AND NIZAR AM umber: Zia Hills 19-1 B - 105

Asset Area: DBE

Release Discovery Date & Time: 5/25/2022

Release Type: Oil Mixture

Provide any known details about the event: (32.0285320, -103.7212761) - Lat Lon

					Spi	I Calculation	n - On Pad Surface	Pool Spill				
Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Deepest point in each of the areas (in.)	No. of boundaries of "shore" in each area		Estimated Average Depth (ft.)	Estimated volume of each pool area (bbl.)	Penetration allowance (ft.)	Total Estimated Volume of Spill (bbl.)	Percentage of Oil if Spilled Fluid is a Mixture	Total Estimated Volume of Spilled Oil (bbl.)	Total Estimated Volume of Spilled Liquid other than Oil (bbl.)
Rectangle A	12.0	6.0	66.00	4	72.000	1.375	17.622	0.069	18.834		0.000	18.834
Rectangle B	16.0	6.0	66.00	4	96.000	1.375	23.496	0.069	25.111		0.000	25.111
Rectangle C					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle D					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle E					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle F					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle G					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle H					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	20	#DIV/0!	#DIV/0!
Rectangle I					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Released to Imag	ing: 6/	7/2022	8:19:17 AM		0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
					<del>-</del>		Т	Total Volume Release:	43.945		0.000	43.945

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 114298

#### CONDITIONS

Operator:	OGRID:
CONOCOPHILLIPS COMPANY	217817
600 W. Illinois Avenue	Action Number:
Midland, TX 79701	114298
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created B	y Condition	Condition Date
jharimo	n None	6/7/2022

	Page 16 of 1	56
Incident ID	NAPP2215827276	
District RP		
Facility ID	fAPP2129428702	
Application ID		

# Site Assessment/Characterization

This information must be provided to the appropriate district office no taler than 50 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release?	<u>&gt;100</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	☐ Yes ⊠ No
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and ver contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.	tical extents of soil
Characterization Report Checklist: Each of the following items must be included in the report.	
<ul> <li>Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring well Field data</li> <li>Data table of soil contaminant concentration data</li> <li>Depth to water determination</li> <li>Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release</li> <li>Boring or excavation logs</li> </ul>	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.

Topographic/Aerial maps

Photographs including date and GIS information

☐ Laboratory data including chain of custody

Received by OCD: 4/24/2023 11:36:26 AM Form C-141 State of New Mexico Page 4 Oil Conservation Division

	Page 17 of 156
Incident ID	NAPP2215827276
District RP	
Facility ID	fAPP2129428702

Application ID

	Page 18 of 1	56
Incident ID	NAPP2215827276	
District RP		
Facility ID	fAPP2129428702	
Application ID		

# **Remediation Plan**

Remediation Plan Checklist: Each of the following items must be	re included in the plan.					
<ul> <li>□ Detailed description of proposed remediation technique</li> <li>□ Scaled sitemap with GPS coordinates showing delineation points</li> <li>□ Estimated volume of material to be remediated</li> <li>□ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC</li> <li>□ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)</li> </ul>						
Deferral Requests Only: Each of the following items must be co-	nfirmed as part of any request for deferral of remediation.					
Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.						
☐ Contamination does not cause an imminent risk to human healt	h, the environment, or groundwater.					
I hereby certify that the information given above is true and comple	ete to the best of my knowledge and understand that pursuant to OCD					
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:Jacob Laird	Title:Environmental Engineer					
Signature: <u>Jacob Laird</u>	Date:4/21/2023					
email:Jacob.Laird@ConocoPhillips.com	Telephone:575-703-5482					
OCD Only						
Received by:	Date:					
☐ Approved ☐ Approved with Attached Conditions of	Approval					
Signature: Nelson Velez	Date: 06/21/2023					



**APPENDIX B** 

Referenced Well Records

# Sample Name: BH01 Date: 02/15/2023 Site Name: Zia Hills 19-1 Incident Number: NAPP2215827276 Job Number: 03D2024049 LITHOLOGIC / SOIL SAMPLING LOG Logged By: J. Falcomata Method: Air Rotary Coordinates: 32.027844, -103.717185 Hole Diameter: 6" Total Depth: 110'

Comments: Soil boring was advanced to a total depth of 110' bgs. No water was observed within the soil boring after at least 72 hours. On 11/14/2022 the soil boring was plugged and abandoned using hydrated bentonite chips.

Part   Part									
D - N - 10 GW coarse to medium grained, tan to light brown, no odor.  SILTY SAND W/ GRAVEL: very fine to fine to medium grained, tan to slightly reddish brown, no odor.  SILTY SAND: very fine to fine grained, tan to light brown, no odor.  M - N - 40 SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  M - N - 50 SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  SM SILTY SAND: very fine to fine grained, tan to very light brown, dry, no odor.  SM SILTY SAND: very fine to fine grained, tan to very light brown, dry, no odor.  SM SILTY SAND: very fine to fine grained, light brown to medium brown, dry, no odor.  SP-SC grained, medium to dark brown, slightly damp, no odor.  SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Depth	-	USCS/Rock Symbol	Lithologic Descriptions
D - N - 10 GW coarse to medium grained, tan to light brown, no odor.  SILTY SAND W/ GRAVEL: very fine to fine to medium grained, tan to slightly reddish brown, no odor.  SILTY SAND: very fine to fine grained, tan to light brown, no odor.  M - N - 40 SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  M - N - 50 SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  SM SILTY SAND: very fine to fine grained, tan to very light brown, dry, no odor.  SM SILTY SAND: very fine to fine grained, tan to very light brown, dry, no odor.  SM SILTY SAND: very fine to fine grained, light brown to medium brown, dry, no odor.  SP-SC grained, medium to dark brown, slightly damp, no odor.  SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.							I - -		
D N 20 SM medium grained, tan to slightly reddish brown, no odor.  SM SILTY SAND: very fine to fine grained, tan to light brown, no odor.  M N 40 SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  M N 50 SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  D - N 60 SM SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.  M - N 80 SP-SC SP-SC Grained, medium to dark brown, slightly damp, no odor.  M - N 90 SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.	D	-	-	Ν	-		- 10	GW	coarse to medium grained, tan to light brown, no
M       -       -       N       -       -       30       SM       brown, no odor.         M       -       -       N       -       -       40       SM       SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.         M       -       -       N       -       -       60       SM       SILTY SAND: very fine to fine grained, tan to very light brown, dry, no odor.         M       -       -       N       -       -       70       SM       SILTY SAND: very fine to fine grained, light brown to medium brown, dry, no odor.         M       -       -       N       -       -       80       SP-SC       POORLY GRADED SAND W/ CLAY: very fine grained, medium brown, damp, no odor.         M       -       -       N       -       -       90       SC       CLAYEY SAND: very fine grained, medium brown, damp, no odor.         M       -       -       N       -       -       100       SC       CLAYEY SAND: very fine grained, medium brown, damp, no odor.	D	1	1	Ν	ı	1 1 1	- - 20	SM	medium grained, tan to slightly reddish brown, no
M N	D	-	-	N	-	- 	- - 30 -	SM	
M N	М	1	ı	Z	ı	1 1 1	- - 40 -	SM	
M - N - SM SILTY SAND: very fine to fine grained, light brown to medium brown, dry, no odor.  M - N - SM SILTY SAND: very fine to fine grained, light brown to medium brown, dry, no odor.  POORLY GRADED SAND W/ CLAY: very fine grained, medium to dark brown, slightly damp, no odor.  M - N - SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.	М	1	ı	Z	ı	1 ' 1	- 50 -	SM	
M - N - SM to medium brown, dry, no odor.  POORLY GRADED SAND W/ CLAY: very fine grained, medium to dark brown, slightly damp, no odor.  N - SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.  CLAYEY SAND: very fine grained, medium brown, damp, no odor.	D	1	ı	Z	ı	1 1 1	- - 60	SM	
M N 80 SP-SC grained, medium to dark brown, slightly damp, no odor.  M N 90 SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  M N 100 SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  M N 110 SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.	М	-	-	Z	-		- - 70	SM	
M - N - T 90 SC damp, no odor.  M - N - T 100 SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.  M - SC CLAYEY SAND: very fine grained, medium brown, damp, no odor.	М	1	ı	Z	ı	1 1 1	- - 80 -	SP-SC	grained, medium to dark brown, slightly damp, no
M N 100 SC damp, no odor.  M N 110 SC CLAYEY SAND: very fine grained, medium brown,	М	-	-	N	-		- - 90	SC	dente de la companya
MI - I - INI - I - I 11()   S(	М	-	-	N	-		100	SC	
Total Donth @ 110 feet has	М	-	-	N	-				damp, no odor.

Total Depth @ 110 feet bgs



APPENDIX C

Photographic Log



Photographic Log
ConocoPhillips Company
Zia Hills 19-1
Incident Number NAPP2215827276



Photograph 1 Date: 5/31/2022
Description: View of the release area prior to remediation, looking east

Photograph 2 Date: 9/14/2022 Description: View of the release area after excavation activities, looking east



Photograph 3 Date: 9/14/2022 Description: View of the daylighting activities of subsurface piplines



Photograph 4 Date: 7/19/2022
Description: View of the release area after excavation activities



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2367-1

Laboratory Sample Delivery Group: 03D2024049

Client Project/Site: Zia Hills 19-1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

MEAMER

Authorized for release by 6/6/2022 11:49:06 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Authorized for release by:

Have a Question?

Ask
The

EOL

····· Links ······

Review your project results through

Visit us at:

www.eurofinsus.com/Env
Released to Imaging: 6/21/2023 2:22:52 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 signature.

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

1

\_

4

5

8

9

4 4

12

TS

Client: Ensolum Laboratory Job ID: 890-2367-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

# **Table of Contents**

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
Surrogate Summary	9
QC Sample Results	10
QC Association Summary	14
Lab Chronicle	16
Certification Summary	18
Method Summary	19
Sample Summary	20
Chain of Custody	21
Receipt Checklists	23

# **Definitions/Glossary**

 Client: Ensolum
 Job ID: 890-2367-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

**Qualifiers** 

GC VOA Qualifier

F1 MS and/or MSD recovery exceeds control limits.

**Qualifier Description** 

F2 MS/MSD RPD exceeds control limits

U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

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 Con

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** 

2

3

4

5

8

11

12

13

#### **Case Narrative**

Client: Ensolum Job ID: 890-2367-1 Project/Site: Zia Hills 19-1

SDG: 03D2024049

Job ID: 890-2367-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2367-1

#### Receipt

The samples were received on 6/2/2022 11:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

#### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26827 and analytical batch 880-26785 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

#### GC Semi VOA

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 880-26795 and 880-26795 and analytical batch 880-26859 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

# **Client Sample Results**

Client: Ensolum Job ID: 890-2367-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

**Client Sample ID: SS06** Lab Sample ID: 890-2367-1

Date Collected: 05/31/22 12:30 Matrix: Solid Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00684		0.00200	mg/Kg		06/03/22 14:04	06/04/22 04:16	
Toluene	0.0634		0.00200	mg/Kg		06/03/22 14:04	06/04/22 04:16	1
Ethylbenzene	0.00786		0.00200	mg/Kg		06/03/22 14:04	06/04/22 04:16	•
m-Xylene & p-Xylene	0.0996		0.00401	mg/Kg		06/03/22 14:04	06/04/22 04:16	
o-Xylene	0.0181		0.00200	mg/Kg		06/03/22 14:04	06/04/22 04:16	
Xylenes, Total	0.118		0.00401	mg/Kg		06/03/22 14:04	06/04/22 04:16	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	101		70 - 130			06/03/22 14:04	06/04/22 04:16	
1,4-Difluorobenzene (Surr)	97		70 - 130			06/03/22 14:04	06/04/22 04:16	
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	0.196		0.00401	mg/Kg			06/06/22 12:13	
Mothod: 2015 NM Discol Bongs	Organica (DB)	0) (CC)						
Method: 8015 NM - Diesel Range Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	<50.0	U	50.0	mg/Kg			06/06/22 09:13	
- Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 16:33	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 16:33	
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 16:33	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
	105		70 - 130			06/03/22 08:31	06/03/22 16:33	
1-Chlorooctane						00/00/00 00 01	00/00/00 10 00	
	108		70 - 130			06/03/22 08:31	06/03/22 16:33	
1-Chlorooctane o-Terphenyl Method: 300.0 - Anions, Ion Chro	108	Soluble	70 - 130			06/03/22 08:31	06/03/22 16:33	
o-Terphenyl	108 omatography -	Soluble Qualifier	70 <sub>-</sub> 130 <b>R</b> L	Unit	D	06/03/22 08:31  Prepared	06/03/22 16:33  Analyzed	Dil Fac

**Client Sample ID: SS07** Lab Sample ID: 890-2367-2

Date Collected: 05/31/22 12:35 Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/03/22 14:04	06/04/22 04:36	1
Toluene	0.00254		0.00200	mg/Kg		06/03/22 14:04	06/04/22 04:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/03/22 14:04	06/04/22 04:36	1
m-Xylene & p-Xylene	0.00617		0.00399	mg/Kg		06/03/22 14:04	06/04/22 04:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/03/22 14:04	06/04/22 04:36	1
Xylenes, Total	0.00617		0.00399	mg/Kg		06/03/22 14:04	06/04/22 04:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			06/03/22 14:04	06/04/22 04:36	1

**Eurofins Carlsbad** 

**Matrix: Solid** 

Job ID: 890-2367-1

Client: Ensolum Project/Site: Zia Hills 19-1 SDG: 03D2024049

**Client Sample ID: SS07** Lab Sample ID: 890-2367-2 Matrix: Solid

Date Collected: 05/31/22 12:35 Date Received: 06/02/22 11:30

Sample Depth: 0.5'

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

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	100	70 - 130	06/03/22 14:04	06/04/22 04:36	1

l		
Method: Total	BTEX - Total	BTEX Calculation

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00871	0.00399	ma/Ka			06/06/22 12:13	1

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

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	ma/Ka			06/06/22 09:13	1

11 (I CO455 NI)		•	(DDO)	
Method: 8015B NN	⊢- Diesel Range	Organics	(DKO) (	GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 17:16	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 17:16	1
C10-C28)								
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 17:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Qualifier	Limits	Prepared	Anaiyzea	DII Fac
1-Chlorooctane	113	70 - 130	06/03/22 08:31	06/03/22 17:16	1
o-Terphenyl	117	70 - 130	06/03/22 08:31	06/03/22 17:16	1
<del></del>					

Method: 300.0 - Anions,	lon Chromatogra <sub>l</sub>	ohy - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	491	4.96	mg/Kg			06/04/22 18:48	1

**Client Sample ID: SS08** Lab Sample ID: 890-2367-3 Matrix: Solid

Date Collected: 05/31/22 12:40 Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Mothod: 9021D	Volatile Organie	Compounds (GC)
I WIELIIOU. OUZ ID '	- voiatile Organic	Compounds (GC)

		()						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		06/03/22 14:04	06/04/22 04:57	1
Toluene	0.0201		0.00199	mg/Kg		06/03/22 14:04	06/04/22 04:57	1
Ethylbenzene	0.00631		0.00199	mg/Kg		06/03/22 14:04	06/04/22 04:57	1
m-Xylene & p-Xylene	0.0947		0.00398	mg/Kg		06/03/22 14:04	06/04/22 04:57	1
o-Xylene	0.0220		0.00199	mg/Kg		06/03/22 14:04	06/04/22 04:57	1
Xylenes, Total	0.117		0.00398	mg/Kg		06/03/22 14:04	06/04/22 04:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			06/03/22 14:04	06/04/22 04:57	1
1,4-Difluorobenzene (Surr)	100		70 - 130			06/03/22 14:04	06/04/22 04:57	1

Method:	Total	RTFY	- Total F	RTFY Ca	dculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.143		0.00398	mg/Kg	_		06/06/22 12:13	1

Analyte	•	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH		 <50.0	U	50.0	mg/Kg		-	06/06/22 09:13	1

Job ID: 890-2367-1

Client: Ensolum Project/Site: Zia Hills 19-1 SDG: 03D2024049

**Client Sample ID: SS08** Lab Sample ID: 890-2367-3

Date Collected: 05/31/22 12:40 Matrix: Solid Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 17:38	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 17:38	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 17:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130			06/03/22 08:31	06/03/22 17:38	1
o-Terphenyl	107		70 - 130			06/03/22 08:31	06/03/22 17:38	1
Method: 300.0 - Anions, Ion Chro	matography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
			4.95				06/04/22 18:54	

Lab Sample ID: 890-2367-4 **Client Sample ID: SS09** Date Collected: 05/31/22 12:45 Matrix: Solid

Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		06/03/22 14:04	06/04/22 05:17	1
Toluene	0.00589		0.00199	mg/Kg		06/03/22 14:04	06/04/22 05:17	1
Ethylbenzene	0.00311		0.00199	mg/Kg		06/03/22 14:04	06/04/22 05:17	1
m-Xylene & p-Xylene	0.0475		0.00398	mg/Kg		06/03/22 14:04	06/04/22 05:17	1
o-Xylene	0.0119		0.00199	mg/Kg		06/03/22 14:04	06/04/22 05:17	1
Xylenes, Total	0.0594		0.00398	mg/Kg		06/03/22 14:04	06/04/22 05:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130			06/03/22 14:04	06/04/22 05:17	1
1,4-Difluorobenzene (Surr)	101		70 - 130			06/03/22 14:04	06/04/22 05:17	1
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.0684		0.00398	mg/Kg			06/06/22 12:13	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			06/06/22 09:13	1
Method: 8015B NM - Diesel Rang	je Organics (Di	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		06/03/22 08:31	06/03/22 17:59	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		06/03/22 08:31	06/03/22 17:59	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		06/03/22 08:31	06/03/22 17:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130			06/03/22 08:31	06/03/22 17:59	1
o-Terphenyl	113		70 - 130			06/03/22 08:31	06/03/22 17:59	1

# **Client Sample Results**

 Client: Ensolum
 Job ID: 890-2367-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

Client Sample ID: SS09 Lab Sample ID: 890-2367-4

Date Collected: 05/31/22 12:45

Date Received: 06/02/22 11:30

Matrix: Solid

Sample Depth: 0.5'

Method: 300.0 - Anions, Ion Chromatography - Soluble							
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	371	25.3	mg/Kg			06/04/22 19:13	5

4

5

7

8

10

12

13

114

# **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-2367-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

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)	
890-2365-A-3-D MS	Matrix Spike	104	100	
890-2365-A-3-E MSD	Matrix Spike Duplicate	102	101	
890-2367-1	SS06	101	97	
890-2367-2	SS07	102	100	
890-2367-3	SS08	105	100	
890-2367-4	SS09	109	101	
LCS 880-26827/1-A	Lab Control Sample	101	102	
LCSD 880-26827/2-A	Lab Control Sample Dup	102	104	
MB 880-26788/5-A	Method Blank	94	91	
MB 880-26827/5-A	Method Blank	93	91	

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-15426-A-10-B MS	Matrix Spike	100	93	
880-15426-A-10-C MSD	Matrix Spike Duplicate	107	97	
890-2367-1	SS06	105	108	
890-2367-2	SS07	113	117	
890-2367-3	SS08	105	107	
890-2367-4	SS09	111	113	
LCS 880-26772/2-A	Lab Control Sample	128	119	
LCSD 880-26772/3-A	Lab Control Sample Dup	113	107	
MB 880-26772/1-A	Method Blank	100	112	

OTPH = o-Terphenyl

1CO = 1-Chlorooctane

Client: Ensolum Job ID: 890-2367-1 SDG: 03D2024049 Project/Site: Zia Hills 19-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-26788/5-A

**Matrix: Solid** 

Analysis Batch: 26785

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26788

1

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/03/22 09:28	06/03/22 11:47	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/03/22 09:28	06/03/22 11:47	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/03/22 09:28	06/03/22 11:47	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/03/22 09:28	06/03/22 11:47	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/03/22 09:28	06/03/22 11:47	1
Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		06/03/22 09:28	06/03/22 11:47	1

MB MB

мв мв

Surrogate	%Recovery Qualifi	er Limits
4-Bromofluorobenzene (Surr)	94	70 - 130
1,4-Difluorobenzene (Surr)	91	70 - 130

Dil Fac Prepared Analyzed 06/03/22 09:28 06/03/22 11:47 06/03/22 09:28 06/03/22 11:47

Lab Sample ID: MB 880-26827/5-A

Matrix: Solid

**Analysis Batch: 26785** 

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

06/03/22 22:24

Prep Batch: 26827

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

0.00400

mg/Kg

MB MB

<0.00400 U

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

Lab Sample ID: LCS 880-26827/1-A

**Matrix: Solid** 

Xylenes, Total

**Analysis Batch: 26785** 

**Client Sample ID: Lab Control Sample** 

06/03/22 14:04

Prep Type: Total/NA

Prep Batch: 26827

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09216		mg/Kg		92	70 - 130	
Toluene	0.100	0.08828		mg/Kg		88	70 - 130	
Ethylbenzene	0.100	0.09094		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	0.200	0.1744		mg/Kg		87	70 - 130	
o-Xylene	0.100	0.09416		mg/Kg		94	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	101	70 _ 130
1.4-Difluorobenzene (Surr)	102	70 - 130

Lab Sample ID: LCSD 880-26827/2-A

**Matrix: Solid** 

**Analysis Batch: 26785** 

Client Sample ID:	Lab Control	<b>Sample Dup</b>
	Deep To	mar Tatal/NIA

Prep Type: Total/NA

Prep Batch: 26827

	<b>Бріке</b>	LCSD LCSD				%Rec		RPD	
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.09492	mg/Kg		95	70 - 130	3	35	

### QC Sample Results

Job ID: 890-2367-1 Client: Ensolum Project/Site: Zia Hills 19-1 SDG: 03D2024049

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

Lab Sample ID: LCSD 880-26827/2-A

**Matrix: Solid Analysis Batch: 26785**  Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26827

Spike LCSD LCSD %Rec **RPD** Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit D Toluene 0.100 0.08896 89 70 - 130 35 mg/Kg Ethylbenzene 0.100 0.09117 mg/Kg 91 70 - 130 0 35 0.200 0.1757 m-Xylene & p-Xylene mg/Kg 88 70 130 35 o-Xylene 0.100 0.09401 mg/Kg 94 70 - 130 O 35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-2365-A-3-D MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 26785** Prep Batch: 26827

MS MS %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Benzene U F1 F2 0.100 0.04998 F1 <0.00200 ma/Ka 49 70 - 130 Toluene 0.0122 F1 F2 0.100 0.05019 F1 38 70 - 130 mg/Kg Ethylbenzene 0.100 0.04600 F1 70 - 130 <0.00200 U F1 F2 mg/Kg 44 0.0111 F1 m-Xylene & p-Xylene 0.200 0.09790 F1 43 70 - 130 mg/Kg o-Xylene <0.00200 U F1 0.100 0.05326 F1 mg/Kg 52 70 - 130

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: 890-2365-A-3-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 26785** 

Prep Type: Total/NA Prep Batch: 26827

%Rec Spike MSD MSD Sample Sample RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Benzene <0.00200 U F1 F2 0.0996 0.07616 F2 mg/Kg 76 70 - 130 42 35 Toluene 0.0122 F1 F2 0.0996 0.07257 F1 F2 mg/Kg 61 70 - 130 36 35 Ethylbenzene <0.00200 U F1 F2 0.0996 0.06858 F1 F2 mg/Kg 67 70 - 130 39 35 0.199 0.1365 F1 63 70 - 130 m-Xylene & p-Xylene 0.0111 F1 mg/Kg 33 35 0.0996 o-Xylene <0.00200 UF1 0.06710 F1 mg/Kg 66 70 - 130 23 35

MSD MSD

Surrogate	%Recovery	Quaimer	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

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

Lab Sample ID: MB 880-26772/1-A

**Matrix: Solid** 

**Analysis Batch: 26776** 

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

Prep Batch: 26772

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed <50.0 U 50.0 mg/Kg 06/03/22 08:31 06/03/22 11:07 Gasoline Range Organics

(GRO)-C6-C10

Client: Ensolum Job ID: 890-2367-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

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

Lab Sample ID: MB 880-26772/1-A **Matrix: Solid** 

Lab Sample ID: LCS 880-26772/2-A

**Matrix: Solid** 

Analysis Batch: 26776

**Analysis Batch: 26776** 

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

Prep Batch: 26772

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 11:07	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 11:07	1

MB MB

MB MB

	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1-Chlorooctane	100		70 - 130	06/03/22 08:31	06/03/22 11:07	1
l	o-Terphenyl	112		70 - 130	06/03/22 08:31	06/03/22 11:07	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 26772

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 1083 108 70 - 130 mg/Kg (GRO)-C6-C10 1000 1155 Diesel Range Organics (Over mg/Kg 115 70 - 130 C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	128		70 - 130
o-Terphenyl	119		70 - 130

Lab Sample ID: LCSD 880-26772/3-A

**Matrix: Solid** Analysis Batch: 26776 Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26772

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	891.9		mg/Kg		89	70 - 130	19	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	1035		mg/Kg		103	70 - 130	11	20	
C10-C28)										

LCSD LCSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 113 70 - 130 o-Terphenyl 107 70 - 130

Lab Sample ID: 880-15426-A-10-B MS

**Matrix: Solid** 

Analysis Batch: 26776

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 26772

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits <49.9 U 997 956.7 94 70 - 130 Gasoline Range Organics mg/Kg (GRO)-C6-C10 997 896.8 Diesel Range Organics (Over <49.9 U mg/Kg 90 70 - 130

C10-C28)

	IVIS	IVIS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	100		70 - 130
o-Terphenyl	93		70 - 130

Lab Sample ID: 880-15426-A-10-C MSD

Job ID: 890-2367-1 Client: Ensolum Project/Site: Zia Hills 19-1 SDG: 03D2024049

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

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 26772

	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	1000	1057		mg/Kg		104	70 - 130	10	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<49.9	U	1000	941.0		mg/Kg		94	70 - 130	5	20
C10-C28)											

**Matrix: Solid** 

Analysis Batch: 26776

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	107		70 - 130
o-Terphenyl	97		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-26795/1-A Client Sample ID: Method Blank

Matrix: Solid **Prep Type: Soluble** 

Analysis Batch: 26859

мв мв

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			06/04/22 17:07	1

Lab Sample ID: LCS 880-26795/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 26859** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	250.0		mg/Kg		100	90 - 110	 

Lab Sample ID: LCSD 880-26795/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 26859

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	254.3		mg/Kg		102	90 - 110	2	20	

Lab Sample ID: 890-2367-3 MS **Client Sample ID: SS08 Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 26859

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	321	F1	248	536.4	F1	ma/Ka		87	90 110	 

Lab Sample ID: 890-2367-3 MSD **Client Sample ID: SS08 Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 26859

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	321	F1	248	538.5	F1	mg/Kg		88	90 - 110	0	20

 Client: Ensolum
 Job ID: 890-2367-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

# **GC VOA**

#### Analysis Batch: 26785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2367-1	SS06	Total/NA	Solid	8021B	26827
890-2367-2	SS07	Total/NA	Solid	8021B	26827
890-2367-3	SS08	Total/NA	Solid	8021B	26827
890-2367-4	SS09	Total/NA	Solid	8021B	26827
MB 880-26788/5-A	Method Blank	Total/NA	Solid	8021B	26788
MB 880-26827/5-A	Method Blank	Total/NA	Solid	8021B	26827
LCS 880-26827/1-A	Lab Control Sample	Total/NA	Solid	8021B	26827
LCSD 880-26827/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	26827
890-2365-A-3-D MS	Matrix Spike	Total/NA	Solid	8021B	26827
890-2365-A-3-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	26827

#### Prep Batch: 26788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-26788/5-A	Method Blank	Total/NA	Solid	5035	

#### Prep Batch: 26827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2367-1	SS06	Total/NA	Solid	5035	
890-2367-2	SS07	Total/NA	Solid	5035	
890-2367-3	SS08	Total/NA	Solid	5035	
890-2367-4	SS09	Total/NA	Solid	5035	
MB 880-26827/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-26827/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-26827/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2365-A-3-D MS	Matrix Spike	Total/NA	Solid	5035	
890-2365-A-3-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

# Analysis Batch: 26921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2367-1	SS06	Total/NA	Solid	Total BTEX	
890-2367-2	SS07	Total/NA	Solid	Total BTEX	
890-2367-3	SS08	Total/NA	Solid	Total BTEX	
890-2367-4	SS09	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Prep Batch: 26772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2367-1	SS06	Total/NA	Solid	8015NM Prep	
890-2367-2	SS07	Total/NA	Solid	8015NM Prep	
890-2367-3	SS08	Total/NA	Solid	8015NM Prep	
890-2367-4	SS09	Total/NA	Solid	8015NM Prep	
MB 880-26772/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-26772/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-26772/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-15426-A-10-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-15426-A-10-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

# Analysis Batch: 26776

<del>-</del>					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2367-1	SS06	Total/NA	Solid	8015B NM	26772

**Eurofins Carlsbad** 

2

Л

\_

7

0

10

12

6/6/2022

 Client: Ensolum
 Job ID: 890-2367-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

# GC Semi VOA (Continued)

# **Analysis Batch: 26776 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2367-2	SS07	Total/NA	Solid	8015B NM	26772
890-2367-3	SS08	Total/NA	Solid	8015B NM	26772
890-2367-4	SS09	Total/NA	Solid	8015B NM	26772
MB 880-26772/1-A	Method Blank	Total/NA	Solid	8015B NM	26772
LCS 880-26772/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	26772
LCSD 880-26772/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	26772
880-15426-A-10-B MS	Matrix Spike	Total/NA	Solid	8015B NM	26772
880-15426-A-10-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	26772

#### Analysis Batch: 26882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep B	3atch
890-2367-1	SS06	Total/NA	Solid	8015 NM	
890-2367-2	SS07	Total/NA	Solid	8015 NM	
890-2367-3	SS08	Total/NA	Solid	8015 NM	
890-2367-4	SS09	Total/NA	Solid	8015 NM	

# HPLC/IC

#### Leach Batch: 26795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2367-1	SS06	Soluble	Solid	DI Leach	
890-2367-2	SS07	Soluble	Solid	DI Leach	
890-2367-3	SS08	Soluble	Solid	DI Leach	
890-2367-4	SS09	Soluble	Solid	DI Leach	
MB 880-26795/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-26795/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-26795/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2367-3 MS	SS08	Soluble	Solid	DI Leach	
890-2367-3 MSD	SS08	Soluble	Solid	DI Leach	

#### Analysis Batch: 26859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2367-1	SS06	Soluble	Solid	300.0	26795
890-2367-2	SS07	Soluble	Solid	300.0	26795
890-2367-3	SS08	Soluble	Solid	300.0	26795
890-2367-4	SS09	Soluble	Solid	300.0	26795
MB 880-26795/1-A	Method Blank	Soluble	Solid	300.0	26795
LCS 880-26795/2-A	Lab Control Sample	Soluble	Solid	300.0	26795
LCSD 880-26795/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	26795
890-2367-3 MS	SS08	Soluble	Solid	300.0	26795
890-2367-3 MSD	SS08	Soluble	Solid	300.0	26795

Client: Ensolum Job ID: 890-2367-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

Client Sample ID: SS06 Lab Sample ID: 890-2367-1 Date Collected: 05/31/22 12:30

**Matrix: Solid** 

Date Received: 06/02/22 11:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	26827	06/03/22 14:04	MR	XEN MID
Total/NA	Analysis	8021B		1	0 mL	1.0 mL	26785	06/04/22 04:16	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26921	06/06/22 12:13	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26882	06/06/22 09:13	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	26772	06/03/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26776	06/03/22 16:33	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	26795	06/03/22 09:55	CH	XEN MID
Soluble	Analysis	300.0		5			26859	06/04/22 18:41	CH	XEN MID

**Client Sample ID: SS07** Lab Sample ID: 890-2367-2

Date Collected: 05/31/22 12:35 **Matrix: Solid** 

Date Received: 06/02/22 11:30

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Prep 5035 26827 Total/NA 5.01 g 5 mL 06/03/22 14:04 MR XEN MID Total/NA 8021B 0 mL XEN MID Analysis 1 1.0 mL 26785 06/04/22 04:36 MR Total/NA Total BTEX 26921 XEN MID Analysis 1 06/06/22 12:13 SM Total/NA Analysis 8015 NM 26882 06/06/22 09:13 SM XEN MID Total/NA 26772 XEN MID Prep 8015NM Prep 10.00 g 06/03/22 08:31 DM 10 mL Total/NA Analysis 8015B NM 26776 06/03/22 17:16 SM XEN MID Soluble XEN MID Leach DI Leach 5.04 g 50 mL 26795 06/03/22 09:55 CH Soluble Analysis 300.0 1 26859 06/04/22 18:48 CH XEN MID

Lab Sample ID: 890-2367-3 **Client Sample ID: SS08** Date Collected: 05/31/22 12:40 **Matrix: Solid** 

Date Received: 06/02/22 11:30

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	26827	06/03/22 14:04	MR	XEN MID
Total/NA	Analysis	8021B		1	0 mL	1.0 mL	26785	06/04/22 04:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26921	06/06/22 12:13	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26882	06/06/22 09:13	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	26772	06/03/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26776	06/03/22 17:38	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	26795	06/03/22 09:55	СН	XEN MID
Soluble	Analysis	300.0		1			26859	06/04/22 18:54	CH	XEN MID

**Client Sample ID: SS09** Lab Sample ID: 890-2367-4

Date Collected: 05/31/22 12:45 Date Received: 06/02/22 11:30

Γ	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	26827	06/03/22 14:04	MR	XEN MID
Total/NA	Analysis	8021B		1	0 mL	1.0 mL	26785	06/04/22 05:17	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			26921	06/06/22 12:13	SM	XEN MID

**Eurofins Carlsbad** 

Page 16 of 24

Matrix: Solid

# **Lab Chronicle**

Client: Ensolum Job ID: 890-2367-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

**Client Sample ID: SS09** Lab Sample ID: 890-2367-4 Date Collected: 05/31/22 12:45

Matrix: Solid

Date Received: 06/02/22 11:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			26882	06/06/22 09:13	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	26772	06/03/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			26776	06/03/22 17:59	SM	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	26795	06/03/22 09:55	CH	XEN MID
Soluble	Analysis	300.0		5			26859	06/04/22 19:13	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: 890-2367-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

**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 06-30-22	
		ELAP	T104704400-21-22		
The following analytes the agency does not of		ut the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for whic	
Analysis Method	Prep Method	Matrix	Analyte		
8015 NM		Solid	Total TPH		
Total BTEX					

3

4

5

7

9

1 4

12

13

14

# **Method Summary**

 Client: Ensolum
 Job ID: 890-2367-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

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** 

1

2

4

5

7

9

. .

12

10

М

# **Sample Summary**

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-2367-1

SDG: 03D2024049

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2367-1	SS06	Solid	05/31/22 12:30	06/02/22 11:30	0.5'
890-2367-2	SS07	Solid	05/31/22 12:35	06/02/22 11:30	0.5'
890-2367-3	SS08	Solid	05/31/22 12:40	06/02/22 11:30	0.5'
890-2367-4	SS09	Solid	05/31/22 12:45	06/02/22 11:30	0.5'

Address:

601 N Marienfeld St Suite 400

Address: City, State ZIP:

Bill to: (if different) Company Name:

City, State ZIP:

817-683-2503 Midland, TX 79701

Email: kjennings@ensolum.com

ANALYSIS REQUEST

Preservative Codes

Midland, TX 79701

601 N Marienfeld St Suite 400

Ensolum, LLC Kalei Jennigns

Project Manager:

Company Name:

Ensolum, LLC Kalei Jennings

# Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-33 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3

3334	Work Order No:
296	
199	
	www.xenco.com Page of
	Work Order Comments
	Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
	State of Project:
	Reporting: Level II QLevel III PST/UST TRRP Level IV
	Deliverables: EDD ADaPT Other:

Carlsbad NM 88220 Phone 575-988-3199 Fax 575-988-3199

1089 N Canal St

**Eurofins Carlsbad** 

Chain of Custody Record

💸 eurofins

**Environment Testing** 

State Zip
TX 79701 SS07 (890-2367-2) SS06 (890-2367-1) Note. Since laboratory accreditations are subject to change Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin isted above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC alboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately. If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC. SS09 (890-2367-4) SS08 (890-2367-3) Possible Hazard Identification Sample Identification - Client ID (Lab ID) Zia Hills 19-1 432-704-5440(Tel) Midland Client Information (Sub Contract Lab) mpty Kit Relinguished by elinquished by: elinquished by elinquished by: eliverable Requested | II III IV Other (specify) 211 W Florida Ave urofins Environment Testing South Centr oject Name npping/Receiving Custody Seals Intact: rconfirmed Yes ∆ No Custody Seal No Primary Deliverable Rank PO# Due Date Requested 6/8/2022 Phone TAT Requested (days): Date/Time #WOS 39000094 Sample Date 5/31/22 5/31/22 5/31/22 5/31/22 Mountain 12 35 Mountain 12 40 Mountain 12 45 Mountair Sample 12 30 (C=comp, G=grab) Sample Type Preservation Code: Company Company Matrix Solid Solid Solid Solid Lab PM Kramer, Jessica Jessica Kramer@et.eurofinsus com E-Mail Ime NELAP - Texas Accreditations Required (See note) Perform MS/MSD (Yes or No) Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Mon Special Instructions/QC Requirements Cooler Temperature(s) °C and Other Remarks Received by: 8016MOD\_NM/8016NM\_S\_Prep (MOD) Full TPH × × × × ×  $\times$  $\times$ 8015MOD\_Calc 300\_ORGFM\_28D/DI\_LEACH Chloride × × × × × × × × 8021B/5035FP\_Calc (MOD) BTEX Analysis Requested × × × Total\_BTEX\_GCV × State of Origin New Mexico Carrier Tracking No(s) Method of Shipment Date/Time Date/Time Date/Time Total Number of containers A HCL
B NaDH
C Zn Acetate
D Nitric Acid
F MeDOH
G Amchior
H Ascorbic Acid
I loe
J DI Water
K EDTA
L EDA COC No 890-776 1 Preservation Codes 890-2367-1 Page 1 of 1 Special Instructions/Note U Acetone
V MCAA
W pH 4-5
Y Trizma Company M Hexane
N None
O AsNaO2
P Na2O4S
Q Na2SO3
R Na2S2O3
S H2SO4
T TSP Dodecahydrate Ver: 06/08/2021 Company Company Months other (specify)

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2367-1 SDG Number: 03D2024049

Login Number: 2367 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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

# **Login Sample Receipt Checklist**

 Client: Ensolum
 Job Number: 890-2367-1

 SDG Number: 03D2024049

SDG Number: 03D2024049

List Source: Eurofins Midland
List Number: 2
List Creation: 06/03/22 11:41 AM

Creator: Teel, Brianna

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

2

3

4

6

۹ Q

13

14

# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2369-1

Laboratory Sample Delivery Group: 03D2024049

Client Project/Site: Zia Hills 19-1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

MEAMER

Authorized for release by: 6/8/2022 3:28:03 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

..... Links

Review your project results through

Have a Question?



Visit us at:

www.eurofinsus.com/Env
Released to Imaging: 6/21/2023 2:22:52 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 signature.

1

3

6

8

11

12

13

Client: Ensolum
Project/Site: Zia Hills 19-1
Laboratory Job ID: 890-2369-1
SDG: 03D2024049

**Table of Contents** 

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
Surrogate Summary	9
QC Sample Results	10
QC Association Summary	19
Lab Chronicle	23
Certification Summary	25
Method Summary	26
Sample Summary	27
Chain of Custody	28
Receipt Chacklists	30

# **Definitions/Glossary**

 Client: Ensolum
 Job ID: 890-2369-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

2024049

#### **Qualifiers**

GC	VOA
Qual	lifier

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

**Qualifier Description** 

#### **GC Semi VOA**

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

#### HPLC/IC

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

# Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

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

 NEG
 Negative / Absent

 POS
 Positive / Present

 PQL
 Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

#### Case Narrative

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-2369-1

SDG: 03D2024049

Job ID: 890-2369-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2369-1

#### Receipt

The samples were received on 6/2/2022 11:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

#### GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS01 (890-2369-1), SS02 (890-2369-2), SS04 (890-2369-4) and SS05 (890-2369-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS02 (890-2369-2), SS04 (890-2369-4) and SS05 (890-2369-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS03 (890-2369-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-26930 and analytical batch 880-26972 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-26930 and analytical batch 880-26972 was outside control limits. Sample non-homogeneity is suspected.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-27007 and analytical batch 880-26972 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: SS01 (890-2369-1), SS02 (890-2369-2), SS03 (890-2369-3) and SS04 (890-2369-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: SS05 (890-2369-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### HPLC/IC

Method 300 ORGFM 28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-26795 and 880-26795 and analytical batch 880-26859 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

 Client: Ensolum
 Job ID: 890-2369-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

Client Sample ID: SS01 Lab Sample ID: 890-2369-1

Date Collected: 05/31/22 12:00 Matrix: Solid
Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	0.942		0.0998	mg/Kg		06/03/22 15:09	06/05/22 22:05	50
Toluene	8.45		0.992	mg/Kg		06/07/22 08:57	06/07/22 21:13	500
Ethylbenzene	12.3		0.0998	mg/Kg		06/03/22 15:09	06/05/22 22:05	50
m-Xylene & p-Xylene	22.3		1.98	mg/Kg		06/07/22 08:57	06/07/22 21:13	500
o-Xylene	5.96		0.992	mg/Kg		06/07/22 08:57	06/07/22 21:13	500
Xylenes, Total	28.3		1.98	mg/Kg		06/07/22 08:57	06/07/22 21:13	500
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Bromofluorobenzene (Surr)	481	S1+	70 - 130			06/03/22 15:09	06/05/22 22:05	50
1,4-Difluorobenzene (Surr)	101		70 - 130			06/03/22 15:09	06/05/22 22:05	50
Method: Total BTEX - Total BTE	EX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	50.0		1.98	mg/Kg			06/08/22 12:08	
Method: 8015 NM - Diesel Rang	e Organics (DR	O) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	24000	-	249	mg/Kg			06/06/22 09:13	
Method: 8015B NM - Diesel Rai	nge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics	3610		249	mg/Kg		06/03/22 08:31	06/04/22 08:16	į
Diesel Range Organics (Over C10-C28)	17100		249	mg/Kg		06/03/22 08:31	06/04/22 08:16	
Oll Range Organics (Over C28-C36)	3250		249	mg/Kg		06/03/22 08:31	06/04/22 08:16	
Surrogate	%Recovery		Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	187	S1+	70 - 130			06/03/22 08:31	06/04/22 08:16	
p-Terphenyl	125		70 - 130			06/03/22 08:31	06/04/22 08:16	
Method: 300.0 - Anions, Ion Ch	romatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
			24.9					

Client Sample ID: SS02

Date Collected: 05/31/22 12:05

Lab Sample ID: 890-2369-2

Matrix: Solid

Date Collected: 05/31/22 12:05 Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.54		0.100	mg/Kg		06/03/22 15:09	06/05/22 22:26	50
Toluene	40.6		1.00	mg/Kg		06/06/22 15:00	06/07/22 18:33	500
Ethylbenzene	28.4		1.00	mg/Kg		06/06/22 15:00	06/07/22 18:33	500
m-Xylene & p-Xylene	166		2.00	mg/Kg		06/06/22 15:00	06/07/22 18:33	500
o-Xylene	37.9		1.00	mg/Kg		06/06/22 15:00	06/07/22 18:33	500
Xylenes, Total	204		2.00	mg/Kg		06/06/22 15:00	06/07/22 18:33	500

**Eurofins Carlsbad** 

2

5

7

9

10

12

13

Job ID: 890-2369-1

Client: Ensolum Project/Site: Zia Hills 19-1 SDG: 03D2024049

**Client Sample ID: SS02** Lab Sample ID: 890-2369-2

Date Collected: 05/31/22 12:05 Matrix: Solid Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	123		70 - 130			06/03/22 15:09	06/05/22 22:26	5
1,4-Difluorobenzene (Surr)	38	S1-	70 - 130			06/03/22 15:09	06/05/22 22:26	5
Method: Total BTEX - Total BT	EX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	274		2.00	mg/Kg			06/08/22 12:08	
Method: 8015 NM - Diesel Ran	ge Organics (DR	O) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	19700		250	mg/Kg			06/06/22 09:13	
Method: 8015B NM - Diesel Ra	nge Organics (Di	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	4450		250	mg/Kg		06/03/22 08:31	06/04/22 08:37	
Diesel Range Organics (Over C10-C28)	12900		250	mg/Kg		06/03/22 08:31	06/04/22 08:37	
Oll Range Organics (Over C28-C36)	2300		250	mg/Kg		06/03/22 08:31	06/04/22 08:37	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	188	S1+	70 - 130			06/03/22 08:31	06/04/22 08:37	
o-Terphenyl	112		70 - 130			06/03/22 08:31	06/04/22 08:37	,
Method: 300.0 - Anions, Ion Ch	romatography -	Soluble						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	604		24.8	mg/Kg			06/04/22 19:32	

Lab Sample ID: 890-2369-3 **Client Sample ID: SS03** Date Collected: 05/31/22 12:10 **Matrix: Solid** 

Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0125		0.00199	mg/Kg		06/07/22 11:40	06/08/22 01:22	1
Toluene	0.0902		0.00199	mg/Kg		06/07/22 11:40	06/08/22 01:22	1
Ethylbenzene	0.0287		0.00199	mg/Kg		06/07/22 11:40	06/08/22 01:22	1
m-Xylene & p-Xylene	0.139		0.00398	mg/Kg		06/07/22 11:40	06/08/22 01:22	1
o-Xylene	0.0329		0.00199	mg/Kg		06/07/22 11:40	06/08/22 01:22	1
Xylenes, Total	0.172		0.00398	mg/Kg		06/07/22 11:40	06/08/22 01:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	138	S1+	70 - 130			06/07/22 11:40	06/08/22 01:22	1
1,4-Difluorobenzene (Surr)	118		70 - 130			06/07/22 11:40	06/08/22 01:22	1
- Method: Total BTEX - Total B1	TEX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.303		0.00398	mg/Kg			06/08/22 12:08	1

# **Client Sample Results**

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

**Client Sample ID: SS03** 

Lab Sample ID: 890-2369-3 Date Collected: 05/31/22 12:10 Matrix: Solid Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	36100		500	mg/Kg			06/06/22 09:13	1
Method: 8015B NM - Diesel Rar	nge Organics (DI	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	8890		500	mg/Kg		06/03/22 08:31	06/04/22 08:58	10
Diesel Range Organics (Over C10-C28)	22900		500	mg/Kg		06/03/22 08:31	06/04/22 08:58	10
Oll Range Organics (Over C28-C36)	4340		500	mg/Kg		06/03/22 08:31	06/04/22 08:58	10
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	229	S1+	70 - 130			06/03/22 08:31	06/04/22 08:58	10
o-Terphenyl	120		70 - 130			06/03/22 08:31	06/04/22 08:58	10
Method: 300.0 - Anions, Ion Ch	romatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	912		49.9	mg/Kg			06/04/22 19:38	10

Client Sample ID: SS04 Lab Sample ID: 890-2369-4

Date Collected: 05/31/22 12:15 Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.65		0.101	mg/Kg		06/03/22 15:09	06/05/22 22:46	50
Toluene	3.22		0.101	mg/Kg		06/03/22 15:09	06/05/22 22:46	50
Ethylbenzene	56.5		1.00	mg/Kg		06/06/22 15:00	06/07/22 18:54	500
m-Xylene & p-Xylene	369		2.00	mg/Kg		06/06/22 15:00	06/07/22 18:54	500
o-Xylene	1.47		0.101	mg/Kg		06/03/22 15:09	06/05/22 22:46	50
Xylenes, Total	453		2.00	mg/Kg		06/06/22 15:00	06/07/22 18:54	500
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	241	S1+	70 - 130			06/03/22 15:09	06/05/22 22:46	50
	48	S1-	70 - 130			06/03/22 15:09	06/05/22 22:46	50
1,4-Difluorobenzene (Surr)  Method: Total BTEX - Total BTEX Analyte	X Calculation			Unit	D			
Method: Total BTEX - Total BTE	X Calculation							
	X Calculation	Qualifier	RL 2.00	<mark>Unit</mark> mg/Kg	<u>D</u>	Prepared	Analyzed 06/08/22 12:08	
Method: Total BTEX - Total BTEX Analyte Total BTEX	X Calculation Result 436  Organics (DR6	Qualifier  O) (GC)	RL 2.00	mg/Kg	<u>D</u>		Analyzed	Dil Fac
Method: Total BTEX - Total BTEX Analyte	X Calculation Result 436  Organics (DR6	Qualifier		mg/Kg	<u>D</u>		Analyzed 06/08/22 12:08 Analyzed	
Method: Total BTEX - Total BTEX Analyte Total BTEX  Method: 8015 NM - Diesel Range	X Calculation Result 436  Organics (DR6	Qualifier  O) (GC)	RL 2.00	mg/Kg		Prepared	Analyzed 06/08/22 12:08	Dil Fac
Method: Total BTEX - Total BTEX Analyte Total BTEX  Method: 8015 NM - Diesel Range Analyte Total TPH	X Calculation Result 436  Organics (DRO Result 39100	Qualifier  O) (GC) Qualifier		mg/Kg		Prepared	Analyzed 06/08/22 12:08 Analyzed	Dil Fac
Method: Total BTEX - Total BTEX Analyte Total BTEX  Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range	X Calculation Result 436  Organics (DRO Result 39100  ge Organics (DI	Qualifier  O) (GC) Qualifier		mg/Kg		Prepared	Analyzed 06/08/22 12:08 Analyzed	Dil Fac
Method: Total BTEX - Total BTEX Analyte Total BTEX  Method: 8015 NM - Diesel Range Analyte	X Calculation Result 436  Organics (DRO Result 39100  ge Organics (DI	Qualifier  O) (GC) Qualifier  RO) (GC)	RL 2.00 RL 499	mg/Kg  Unit  mg/Kg	<u>D</u>	Prepared Prepared	Analyzed 06/08/22 12:08  Analyzed 06/06/22 09:13	Dil Fac

**Eurofins Carlsbad** 

**Matrix: Solid** 

Matrix: Solid

**Matrix: Solid** 

Job ID: 890-2369-1 SDG: 03D2024049

Project/Site: Zia Hills 19-1 SDG: 03D2024049

Client Sample ID: SS04

Lab Sample ID: 890-2369-4

Date Collected: 05/31/22 12:15
Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Client: Ensolum

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over	4550		499	mg/Kg		06/03/22 08:31	06/04/22 09:19	10
C28-C36)								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	256	S1+	70 - 130			06/03/22 08:31	06/04/22 09:19	10
o-Terphenyl	131	S1+	70 - 130			06/03/22 08:31	06/04/22 09:19	10

Method: 300.0 - Anions, Ion Chromatography - SolubleAnalyteResult ChlorideQualifierRL QualifierUnit mg/KgD Prepared Mg/KgAnalyzed Mg/KgDil Fac Dil Fac Di

Client Sample ID: SS05 Lab Sample ID: 890-2369-5

Date Collected: 05/31/22 12:20 Date Received: 06/02/22 11:30

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	4.67		0.101	mg/Kg		06/03/22 15:09	06/05/22 23:07	5
Toluene	9.91		0.101	mg/Kg		06/03/22 15:09	06/05/22 23:07	5
Ethylbenzene	42.6		0.990	mg/Kg		06/06/22 15:00	06/07/22 19:14	50
m-Xylene & p-Xylene	256		1.98	mg/Kg		06/06/22 15:00	06/07/22 19:14	50
o-Xylene	4.07		0.101	mg/Kg		06/03/22 15:09	06/05/22 23:07	5
Xylenes, Total	313		1.98	mg/Kg		06/06/22 15:00	06/07/22 19:14	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	350	S1+	70 - 130			06/03/22 15:09	06/05/22 23:07	5
1,4-Difluorobenzene (Surr)	81		70 - 130			06/03/22 15:09	06/05/22 23:07	5
Method: Total BTEX - Total BTEX	K Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	317		1.98	mg/Kg			06/08/22 12:08	
Method: 8015 NM - Diesel Range Analyte		O) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	26000		499	mg/Kg			06/06/22 09:13	
. 1777 -								
Method: 8015B NM - Diesel Rang	ge Organics (DI	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	
								Dil Fa
Gasoline Range Organics (GRO)-C6-C10	6260		499	mg/Kg		06/03/22 08:31	06/04/22 08:16	
3 3	6260 19700		499 499	mg/Kg		06/03/22 08:31 06/03/22 08:31	06/04/22 08:16 06/04/22 08:16	1
(GRO)-C6-C10 Diesel Range Organics (Over		U						1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	19700		499	mg/Kg		06/03/22 08:31	06/04/22 08:16	Dil Fa  1  1  Dil Fa
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<b>19700</b> <499		499 499	mg/Kg		06/03/22 08:31 06/03/22 08:31	06/04/22 08:16 06/04/22 08:16	1 1 1 <i>Dil Fa</i>
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<b>19700</b> <499 <i>%Recovery</i>	Qualifier	499 499 <i>Limits</i>	mg/Kg		06/03/22 08:31 06/03/22 08:31 <b>Prepared</b>	06/04/22 08:16 06/04/22 08:16 Analyzed	1 1 1 1 Dil Fa
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	19700 <499 <u>**Recovery</u> 212 130	Qualifier S1+	499 499  Limits 70 - 130	mg/Kg		06/03/22 08:31 06/03/22 08:31 Prepared 06/03/22 08:31	06/04/22 08:16 06/04/22 08:16 Analyzed 06/04/22 08:16	1 1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	19700 <499	Qualifier S1+	499 499  Limits 70 - 130	mg/Kg	D	06/03/22 08:31 06/03/22 08:31 Prepared 06/03/22 08:31	06/04/22 08:16 06/04/22 08:16 Analyzed 06/04/22 08:16	1 1 1 1 Dil Fa

# **Surrogate Summary**

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limit
		BFB1	DFBZ1	
b Sample ID	Client Sample ID	(70-130)	(70-130)	
0-15447-A-7-D MS	Matrix Spike	100	101	
0-15447-A-7-E MSD	Matrix Spike Duplicate	99	102	
0-15516-A-1-B MS	Matrix Spike	107	105	
0-15516-A-1-C MSD	Matrix Spike Duplicate	102	101	
0-15523-A-1-F MS	Matrix Spike	105	89	
0-15523-A-1-G MSD	Matrix Spike Duplicate	107	91	
0-2368-A-41-B MS	Matrix Spike	97	100	
0-2368-A-41-C MSD	Matrix Spike Duplicate	96	99	
0-2369-1	SS01	481 S1+	101	
0-2369-2	SS02	123	38 S1-	
0-2369-3	SS03	138 S1+	118	
0-2369-4	SS04	241 S1+	48 S1-	
0-2369-5	SS05	350 S1+	81	
CS 880-26838/1-A	Lab Control Sample	98	99	
CS 880-26930/1-A	Lab Control Sample	104	103	
S 880-26988/1-A	Lab Control Sample	103	98	
CS 880-27007/1-A	Lab Control Sample	101	104	
CSD 880-26838/2-A	Lab Control Sample Dup	107	98	
CSD 880-26930/2-A	Lab Control Sample Dup	104	105	
CSD 880-26988/2-A	Lab Control Sample Dup	104	102	
CSD 880-27007/2-A	Lab Control Sample Dup	101	101	
B 880-26837/5-A	Method Blank	101	91	
B 880-26838/5-A	Method Blank	99	91	
B 880-26930/5-A	Method Blank	97	91	
B 880-26988/5-A	Method Blank	98	100	
B 880-27007/5-A	Method Blank	103	90	
Surrogate Legend				

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)	
880-15426-A-10-B MS	Matrix Spike	100	93	
880-15426-A-10-C MSD	Matrix Spike Duplicate	107	97	
890-2369-1	SS01	187 S1+	125	
890-2369-2	SS02	188 S1+	112	
890-2369-3	SS03	229 S1+	120	
890-2369-4	SS04	256 S1+	131 S1+	
890-2369-5	SS05	212 S1+	130	
LCS 880-26772/2-A	Lab Control Sample	128	119	
LCSD 880-26772/3-A	Lab Control Sample Dup	113	107	
MB 880-26772/1-A	Method Blank	100	112	

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2369-1 SDG: 03D2024049 Project/Site: Zia Hills 19-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-26837/5-A

**Matrix: Solid** 

Analysis Batch: 26862

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26837

	MB	мв						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/03/22 15:03	06/05/22 09:25	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/03/22 15:03	06/05/22 09:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/03/22 15:03	06/05/22 09:25	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/03/22 15:03	06/05/22 09:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/03/22 15:03	06/05/22 09:25	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		06/03/22 15:03	06/05/22 09:25	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	06/03/22 15:03	06/05/22 09:25	1
1,4-Difluorobenzene (Surr)	91		70 - 130	06/03/22 15:03	06/05/22 09:25	1

ab Sample ID: MB 880-26838/5-A

Client Sample ID: Method Blank

ı	Lab Sample ID. IIID 000-20030/3-A	Olient Gample ib. Method Blank
	Matrix: Solid	Prep Type: Total/NA
	Analysis Batch: 26862	Prep Batch: 26838
l	MB MB	

Analyte	Result (	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/03/22 15:09	06/05/22 20:01	1
Toluene	<0.00200 U	U	0.00200	mg/Kg		06/03/22 15:09	06/05/22 20:01	1
Ethylbenzene	<0.00200 U	U	0.00200	mg/Kg		06/03/22 15:09	06/05/22 20:01	1
m-Xylene & p-Xylene	<0.00400 \	U	0.00400	mg/Kg		06/03/22 15:09	06/05/22 20:01	1
o-Xylene	<0.00200 U	U	0.00200	mg/Kg		06/03/22 15:09	06/05/22 20:01	1
Xvlenes, Total	<0.00400 \	U	0.00400	ma/Ka		06/03/22 15:09	06/05/22 20:01	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	06/03/22 15:09	06/05/22 20:01	1
1,4-Difluorobenzene (Surr)	91		70 - 130	06/03/22 15:09	06/05/22 20:01	1

Lab Sample ID: LCS 880-26838/1-A

**Matrix: Solid** 

**Analysis Batch: 26862** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 26838

	Spike	LCS	LCS				%Rec		
lyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
zene	0.100	0.09399		mg/Kg		94	70 - 130		
ene	0.100	0.08843		mg/Kg		88	70 - 130		
/lbenzene	0.100	0.08833		mg/Kg		88	70 - 130		
ylene & p-Xylene	0.200	0.1766		mg/Kg		88	70 - 130		
ylene	0.100	0.08950		mg/Kg		90	70 - 130		
	zene zene lene ylbenzene tylene & p-Xylene	Added           Izene         0.100           Idene         0.100           Idene         0.100           Idene         0.200	Added zene         Added 2.00         Result 2.00           zene         0.100         0.09399           zene         0.100         0.08843           zylbenzene         0.100         0.08833           zylene & p-Xylene         0.200         0.1766	Added zene         Added number         Result Qualifier           zene         0.100         0.09399           zene         0.100         0.08843           zene         0.100         0.08833           zene         0.200         0.1766	Added zene         Added zene         Result Qualifier         Unit           zene         0.100         0.09399         mg/Kg           zene         0.100         0.08843         mg/Kg           z/lbenzene         0.100         0.08833         mg/Kg           z/lene & p-Xylene         0.200         0.1766         mg/Kg	Added zene         Added Result value         Qualifier Unit value         D           zene         0.100         0.09399         mg/Kg           zene         0.100         0.08843         mg/Kg           zylbenzene         0.100         0.08833         mg/Kg           zylene & p-Xylene         0.200         0.1766         mg/Kg	Added zene         Added 2 mesult	Added zene         Added zene         Result Qualifier         Unit         D         %Rec vinits           zene         0.100         0.09399         mg/Kg         94         70 - 130           zene         0.100         0.08843         mg/Kg         88         70 - 130           z/benzene         0.100         0.08833         mg/Kg         88         70 - 130           z/glene & p-Xylene         0.200         0.1766         mg/Kg         88         70 - 130	Added zene         Added 2 Result Qualifier         Unit Unit Unit Unit Unit Unit Unit Unit

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	98	70 - 130
1.4-Difluorobenzene (Surr)	99	70 - 130

Lab Sample ID: LCSD 880-26838/2-A

**Matrix: Solid** 

**Analysis Batch: 26862** 

Cli	ient	Samp	le ID	: Lab	Cor	ntro	S	am	ple	e D	up
					Pre	ер Т	ype	e: 1	ot	al/l	NA
					_		_				

Prep Batch: 26838

Spike LCSD LCSD RPD %Rec Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Benzene 0.100 0.09481 mg/Kg 95 70 - 130

# QC Sample Results

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

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

Lab Sample ID: LCSD 880-26838/2-A **Matrix: Solid** 

**Analysis Batch: 26862** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 26838

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Toluene	0.100	0.09202		mg/Kg		92	70 - 130	4	35
Ethylbenzene	0.100	0.09525		mg/Kg		95	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.1940		mg/Kg		97	70 - 130	9	35
o-Xylene	0.100	0.09899		mg/Kg		99	70 - 130	10	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 890-2368-A-41-B MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 26862** 

Prep Type: Total/NA

Prep Batch: 26838

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U	0.101	0.09396		mg/Kg		93	70 - 130	
Toluene	<0.00199	U	0.101	0.08728		mg/Kg		86	70 - 130	
Ethylbenzene	<0.00199	U	0.101	0.08332		mg/Kg		82	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1651		mg/Kg		82	70 - 130	
o-Xylene	<0.00199	U	0.101	0.08302		mg/Kg		82	70 - 130	

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	97	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: 890-2368-A-41-C MSD

**Matrix: Solid** 

Analysis Batch: 26862

Client Sample ID: Matrix Spike Duplicate

70 - 130

Prep Type: Total/NA Prep Batch: 26838

Spike MSD MSD %Rec RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Benzene <0.00199 0.101 0.09484 mg/Kg 94 70 - 130 35 Toluene <0.00199 U 0.101 0.08783 mg/Kg 87 70 - 130 35 Ethylbenzene <0.00199 U 0.101 0.08438 mg/Kg 84 70 - 130 35 0.201 m-Xylene & p-Xylene <0.00398 U 0.1657 82 70 - 130 35 mg/Kg

0.08336

mg/Kg

0.101

MSD MSD

<0.00199 U

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	96	70 - 130
1,4-Difluorobenzene (Surr)	99	70 - 130

Lab Sample ID: MB 880-26930/5-A

**Matrix: Solid** 

o-Xylene

Analysis Batch: 26972

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26930

35

мв мв

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg	_	06/06/22 15:00	06/07/22 11:19	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/06/22 15:00	06/07/22 11:19	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/06/22 15:00	06/07/22 11:19	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/06/22 15:00	06/07/22 11:19	1

# **QC Sample Results**

Client: Ensolum Job ID: 890-2369-1 SDG: 03D2024049 Project/Site: Zia Hills 19-1

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

Lab Sample ID: MB 880-26930/5-A

**Matrix: Solid** 

**Analysis Batch: 26972** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 26930

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200	mg/Kg	_	06/06/22 15:00	06/07/22 11:19	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		06/06/22 15:00	06/07/22 11:19	1

мв мв

мв мв

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97	70 - 130	06/06/22 15:00	06/07/22 11:19	1
1,4-Difluorobenzene (Surr)	91	70 - 130	06/06/22 15:00	06/07/22 11:19	1

Lab Sample ID: LCS 880-26930/1-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

**Analysis Batch: 26972** 

Prep Type: Total/NA

Prep Batch: 26930

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1066		mg/Kg		107	70 - 130	
Toluene	0.100	0.1011		mg/Kg		101	70 - 130	
Ethylbenzene	0.100	0.1048		mg/Kg		105	70 - 130	
m-Xylene & p-Xylene	0.200	0.2115		mg/Kg		106	70 - 130	
o-Xylene	0.100	0.1058		mg/Kg		106	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	103	70 - 130

Lab Sample ID: LCSD 880-26930/2-A

Matrix: Solid

Analysis Batch: 26972

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26930

	%Rec		RPD
%Rec	Limits	RPD	Limit
97	70 - 130	10	35
85	70 - 130	17	35
80	70 - 130	27	35
80	70 - 130	28	35
80	70 - 130	28	35
	97 85 80 80	%Rec         Limits           97         70 - 130           85         70 - 130           80         70 - 130           80         70 - 130	%Rec         Limits         RPD           97         70 - 130         10           85         70 - 130         17           80         70 - 130         27           80         70 - 130         28

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 _ 130
1.4-Difluorobenzene (Surr)	105	70 - 130

Lab Sample ID: 880-15447-A-7-D MS

**Matrix: Solid** 

Analysis Batch: 26972

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 26930

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U	0.0996	0.08096		mg/Kg		81	70 - 130	
Toluene	<0.00199	U	0.0996	0.07038		mg/Kg		71	70 - 130	
Ethylbenzene	<0.00199	U F2 F1	0.0996	0.06491	F1	mg/Kg		65	70 - 130	
m-Xylene & p-Xylene	<0.00398	U F2 F1	0.199	0.1299	F1	mg/Kg		65	70 - 130	
o-Xylene	<0.00199	U F2 F1	0.0996	0.06511	F1	mg/Kg		65	70 - 130	

**Eurofins Carlsbad** 

Released to Imaging: 6/21/2023 2:22:52 PM

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

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

Lab Sample ID: 880-15447-A-7-D MS

**Matrix: Solid** 

Analysis Batch: 26972

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 26930

MS MS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 100 70 - 130 1,4-Difluorobenzene (Surr) 101 70 - 130

Lab Sample ID: 880-15447-A-7-E MSD **Client Sample ID: Matrix Spike Duplicate** 

**Matrix: Solid** 

Analysis Batch: 26972

Prep Type: Total/NA

Prep Batch: 26930

-	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00199	U	0.101	0.1021		mg/Kg		101	70 - 130	23	35
Toluene	< 0.00199	U	0.101	0.09554		mg/Kg		95	70 - 130	30	35
Ethylbenzene	< 0.00199	U F2 F1	0.101	0.09559	F2	mg/Kg		95	70 - 130	38	35
m-Xylene & p-Xylene	<0.00398	U F2 F1	0.201	0.1909	F2	mg/Kg		95	70 - 130	38	35
o-Xylene	<0.00199	U F2 F1	0.101	0.09548	F2	mg/Kg		95	70 - 130	38	35

MSD MSD

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

Lab Sample ID: MB 880-26988/5-A Client Sample ID: Method Blank **Matrix: Solid** 

**Analysis Batch: 26971** 

Prep Type: Total/NA Prep Batch: 26988

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/07/22 08:57	06/07/22 12:43	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/07/22 08:57	06/07/22 12:43	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/07/22 08:57	06/07/22 12:43	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/07/22 08:57	06/07/22 12:43	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/07/22 08:57	06/07/22 12:43	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		06/07/22 08:57	06/07/22 12:43	1

мв мв

Surrogate	%Recovery Qua	ualifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98	70 - 130	06/07/22 08:57	06/07/22 12:43	1
1,4-Difluorobenzene (Surr)	100	70 - 130	06/07/22 08:57	06/07/22 12:43	1

Lab Sample ID: LCS 880-26988/1-A

**Matrix: Solid** 

**Analysis Batch: 26971** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 26988

	<b>Бріке</b>	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08600		mg/Kg		86	70 - 130	
Toluene	0.100	0.09176		mg/Kg		92	70 - 130	
Ethylbenzene	0.100	0.08718		mg/Kg		87	70 - 130	
m-Xylene & p-Xylene	0.200	0.2004		mg/Kg		100	70 - 130	
o-Xylene	0.100	0.09933		mg/Kg		99	70 - 130	

LCS LCS

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

Client: Ensolum Job ID: 890-2369-1 SDG: 03D2024049 Project/Site: Zia Hills 19-1

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

Lab Sample ID: LCS 880-26988/1-A

**Matrix: Solid** 

**Analysis Batch: 26971** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 26988

LCS LCS

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

Lab Sample ID: LCSD 880-26988/2-A

**Matrix: Solid** 

Analysis Batch: 26971

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 26988

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1017		mg/Kg		102	70 - 130	17	35
Toluene	0.100	0.1016		mg/Kg		102	70 - 130	10	35
Ethylbenzene	0.100	0.09480		mg/Kg		95	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.2151		mg/Kg		108	70 - 130	7	35
o-Xylene	0.100	0.1062		mg/Kg		106	70 - 130	7	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	102	70 - 130

Lab Sample ID: 880-15516-A-1-B MS

**Matrix: Solid** 

**Analysis Batch: 26971** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 26988

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U	0.101	0.1028		mg/Kg		102	70 - 130	
Toluene	<0.00199	U	0.101	0.09960		mg/Kg		99	70 - 130	
Ethylbenzene	<0.00199	U	0.101	0.09110		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.201	0.2068		mg/Kg		103	70 - 130	
o-Xylene	<0.00199	U	0.101	0.1010		mg/Kg		100	70 - 130	
0-Xylerie	VO.00133	O	0.101	0.1010		mg/rtg		100	70 - 100	

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	107	70 - 130
1.4-Difluorobenzene (Surr)	105	70 - 130

Lab Sample ID: 880-15516-A-1-C MSD

Matrix: Solid

**Analysis Batch: 26971** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 26988

	Sample	Sample	<b>Бріке</b>	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	<0.00199	U	0.100	0.09110		mg/Kg		91	70 - 130	12	35	
Toluene	<0.00199	U	0.100	0.08982		mg/Kg		90	70 - 130	10	35	
Ethylbenzene	< 0.00199	U	0.100	0.08215		mg/Kg		82	70 - 130	10	35	
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1860		mg/Kg		93	70 - 130	11	35	
o-Xylene	< 0.00199	U	0.100	0.09081		mg/Kg		91	70 - 130	11	35	

MSD MSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	102	70 - 130
1,4-Difluorobenzene (Surr)	101	70 - 130

# QC Sample Results

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

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

Lab Sample ID: MB 880-27007/5-A

**Matrix: Solid** 

Analysis Batch: 26972

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 27007

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		06/07/22 11:40	06/07/22 21:56	
Toluene	<0.00200	U	0.00200	mg/Kg		06/07/22 11:40	06/07/22 21:56	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/07/22 11:40	06/07/22 21:56	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		06/07/22 11:40	06/07/22 21:56	
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/07/22 11:40	06/07/22 21:56	
Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		06/07/22 11:40	06/07/22 21:56	

MB MB

MD MD

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	06/07/22 11:40	06/07/22 21:56	1
1,4-Difluorobenzene (Surr)	90		70 - 130	06/07/22 11:40	06/07/22 21:56	1

Lab Sample ID: LCS 880-27007/1-A

**Matrix: Solid** 

**Analysis Batch: 26972** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 27007

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1001 mg/Kg 100 70 - 130 Toluene 0.100 0.09532 mg/Kg 95 70 - 130 Ethylbenzene 0.100 0.09610 mg/Kg 96 70 - 130 70 - 130 0.200 0.1925 96 m-Xylene & p-Xylene mg/Kg 0.100 o-Xylene 0.09868 mg/Kg 99 70 - 130

LCS LCS

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

Lab Sample ID: LCSD 880-27007/2-A

**Matrix: Solid** 

**Analysis Batch: 26972** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 27007

LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Benzene 0.100 0.08068 mg/Kg 81 70 - 130 21 35 Toluene 0.100 0.07724 mg/Kg 77 70 - 130 21 35 Ethylbenzene 0.100 0.07992 mg/Kg 80 70 - 130 18 35 m-Xylene & p-Xylene 0.200 0.1613 mg/Kg 81 70 - 130 18 35 0.100 0.08325 o-Xylene mg/Kg 83 70 - 130 17 35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1.4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: 880-15523-A-1-F MS

**Matrix: Solid** 

Analysis Batch: 26972

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

Prep Batch: 27007

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 35 <0.00199 U F1 0.100 0.03500 F1 Benzene mg/Kg 70 - 130 Toluene <0.00199 UF1 0.100 0.03846 F1 mg/Kg 38 70 - 130

**Eurofins Carlsbad** 

1

# QC Sample Results

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

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

Lab Sample ID: 880-15523-A-1-F MS

Lab Sample ID: 880-15523-A-1-G MSD

**Matrix: Solid** 

**Analysis Batch: 26972** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 27007

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 0.100 Ethylbenzene <0.00199 U F1 0.04263 F1 43 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00398 UF1 0.200 0.08879 F1 mg/Kg 44 70 - 130 0.100 o-Xylene <0.00199 UF1 0.04822 F1 48 70 - 130 mg/Kg

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	89		70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

**Matrix: Solid** Prep Batch: 27007 **Analysis Batch: 26972** MSD MSD Sample Sample Spike RPD

Result Qualifier Result Qualifier RPD Limit Analyte babbA Unit %Rec Limits 0.0998 Benzene <0.00199 UF1 0.04180 F1 mg/Kg 42 70 - 130 18 35 Toluene <0.00199 UF1 0.0998 0.04471 F1 mg/Kg 45 70 - 130 15 35 Ethylbenzene <0.00199 UF1 0.0998 0.04699 F1 47 70 - 130 10 35 mg/Kg 0.200 49 70 - 130 35 m-Xylene & p-Xylene <0.00398 UF1 0.09732 F1 mg/Kg 9 0.0998 <0.00199 U F1 0.05097 F1 51 70 - 130 6 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	91		70 - 130

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

Lab Sample ID: MB 880-26772/1-A

**Matrix: Solid** 

Analysis Batch: 26776

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

Prep Batch: 26772

	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		06/03/22 08:31	06/03/22 11:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 11:07	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/03/22 08:31	06/03/22 11:07	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	06/03/22 08:31	06/03/22 11:07	1
o-Terphenyl	112		70 - 130	06/03/22 08:31	06/03/22 11:07	1

Lab Sample ID: LCS 880-26772/2-A

**Matrix: Solid** 

**Analysis Batch: 26776** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 26772

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	1083		mg/Kg		108	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1155		mg/Kg		115	70 - 130	
C10-C28)								

Job ID: 890-2369-1 Client: Ensolum Project/Site: Zia Hills 19-1 SDG: 03D2024049

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

LCS LCS

Lab Sample ID: LCS 880-26772/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** 

**Analysis Batch: 26776** 

Prep Type: Total/NA

Prep Batch: 26772

Surrogate %Recovery Qualifier 1-Chlorooctane 128 70 - 130 o-Terphenyl 119 70 - 130

Lab Sample ID: LCSD 880-26772/3-A Client Sample ID: Lab Control Sample Dup

Limits

**Matrix: Solid** 

**Analysis Batch: 26776** 

Prep Type: Total/NA

Prep Batch: 26772

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 1000 891.9 89 70 - 13019 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 1035 103 mg/Kg 70 - 13011 20 C10-C28)

LCSD LCSD

Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 113 107 70 - 130 o-Terphenyl

Lab Sample ID: 880-15426-A-10-B MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 26776** 

Prep Type: Total/NA

Prep Batch: 26772

Sample Sample MS MS Spike Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <49.9 U 997 956.7 mg/Kg 94 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 997 896.8 mg/Kg 90 70 - 130 C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 100 o-Terphenyl 93 70 - 130

Lab Sample ID: 880-15426-A-10-C MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 26776** Prep Batch: 26772 MSD MSD %Rec

Sample Sample RPD Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit U 1000 1057 Gasoline Range Organics <49.9 104 70 - 130 10 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 1000 941.0 mg/Kg 94 70 - 130 5 20

C10-C28)

MSD MSD %Recovery Qualifier Surrogate Limits 1-Chlorooctane 107 70 - 130 97 70 - 130 o-Terphenyl

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

# **QC Sample Results**

 Client: Ensolum
 Job ID: 890-2369-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-26795/1-A

Matrix: Solid

Analysis Batch: 26859

MB MB

 Analyte
 Result
 Qualifier
 RL
 Unit
 D
 Prepared
 Analyzed
 Dil Fac

 Chloride
 <5.00</td>
 U
 5.00
 mg/Kg
 06/04/22 17:07
 1

Lab Sample ID: LCS 880-26795/2-A

Matrix: Solid

**Analysis Batch: 26859** 

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 250.0 mg/Kg 100 90 - 110

Lab Sample ID: LCSD 880-26795/3-A

Matrix: Solid

**Analysis Batch: 26859** 

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 254.3 mg/Kg 102 90 - 110

Lab Sample ID: 890-2367-A-3-B MS

Matrix: Solid

**Analysis Batch: 26859** 

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier %Rec Unit Limits Chloride 321 F1 248 536.4 F1 90 - 110 mg/Kg

Lab Sample ID: 890-2367-A-3-C MSD

Matrix: Solid

Analysis Batch: 26859

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 321 F1 248 538.5 F1 mg/Kg 88 90 - 110 20

**Eurofins Carlsbad** 

2

3

4

6

8

9 10

11 12

13

14

 Client: Ensolum
 Job ID: 890-2369-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

**GC VOA** 

Prep Batch: 26837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-26837/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 26838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-1	SS01	Total/NA	Solid	5035	
890-2369-2	SS02	Total/NA	Solid	5035	
890-2369-4	SS04	Total/NA	Solid	5035	
890-2369-5	SS05	Total/NA	Solid	5035	
MB 880-26838/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-26838/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-26838/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2368-A-41-B MS	Matrix Spike	Total/NA	Solid	5035	
890-2368-A-41-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

**Analysis Batch: 26862** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-1	SS01	Total/NA	Solid	8021B	26838
890-2369-2	SS02	Total/NA	Solid	8021B	26838
890-2369-4	SS04	Total/NA	Solid	8021B	26838
890-2369-5	SS05	Total/NA	Solid	8021B	26838
MB 880-26837/5-A	Method Blank	Total/NA	Solid	8021B	26837
MB 880-26838/5-A	Method Blank	Total/NA	Solid	8021B	26838
LCS 880-26838/1-A	Lab Control Sample	Total/NA	Solid	8021B	26838
LCSD 880-26838/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	26838
890-2368-A-41-B MS	Matrix Spike	Total/NA	Solid	8021B	26838
890-2368-A-41-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	26838

Prep Batch: 26930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-2	SS02	Total/NA	Solid	5035	
890-2369-4	SS04	Total/NA	Solid	5035	
890-2369-5	SS05	Total/NA	Solid	5035	
MB 880-26930/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-26930/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-26930/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-15447-A-7-D MS	Matrix Spike	Total/NA	Solid	5035	
880-15447-A-7-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 26971

<b>Lab Sample ID</b> 890-2369-1	Client Sample ID SS01	Prep Type Total/NA	Matrix Solid	Method 8021B	Prep Batch 26988
MB 880-26988/5-A	Method Blank	Total/NA	Solid	8021B	26988
LCS 880-26988/1-A	Lab Control Sample	Total/NA	Solid	8021B	26988
LCSD 880-26988/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	26988
880-15516-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	26988
880-15516-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	26988

Analysis Batch: 26972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-2	SS02	Total/NA	Solid	8021B	26930
890-2369-3	SS03	Total/NA	Solid	8021B	27007

**Eurofins Carlsbad** 

Page 19 of 31

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

**GC VOA (Continued)** 

# **Analysis Batch: 26972 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-4	SS04	Total/NA	Solid	8021B	26930
890-2369-5	SS05	Total/NA	Solid	8021B	26930
MB 880-26930/5-A	Method Blank	Total/NA	Solid	8021B	26930
MB 880-27007/5-A	Method Blank	Total/NA	Solid	8021B	27007
LCS 880-26930/1-A	Lab Control Sample	Total/NA	Solid	8021B	26930
LCS 880-27007/1-A	Lab Control Sample	Total/NA	Solid	8021B	27007
LCSD 880-26930/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	26930
LCSD 880-27007/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	27007
880-15447-A-7-D MS	Matrix Spike	Total/NA	Solid	8021B	26930
880-15447-A-7-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	26930
880-15523-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	27007
880-15523-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	27007

#### Prep Batch: 26988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-1	SS01	Total/NA	Solid	5035	
MB 880-26988/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-26988/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-26988/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-15516-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-15516-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### Prep Batch: 27007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
890-2369-3	SS03	Total/NA	Solid	5035	
MB 880-27007/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-27007/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-27007/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-15523-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-15523-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### **Analysis Batch: 27089**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-1	SS01	Total/NA	Solid	Total BTEX	
890-2369-2	SS02	Total/NA	Solid	Total BTEX	
890-2369-3	SS03	Total/NA	Solid	Total BTEX	
890-2369-4	SS04	Total/NA	Solid	Total BTEX	
890-2369-5	SS05	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

# Prep Batch: 26772

890-2369-1	SS01			Method	Prep Batch
	0001	Total/NA	Solid	8015NM Prep	
890-2369-2	SS02	Total/NA	Solid	8015NM Prep	
890-2369-3	SS03	Total/NA	Solid	8015NM Prep	
890-2369-4	SS04	Total/NA	Solid	8015NM Prep	
890-2369-5	SS05	Total/NA	Solid	8015NM Prep	
MB 880-26772/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-26772/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-26772/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1

SDG: 03D2024049

# GC Semi VOA (Continued)

### Prep Batch: 26772 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15426-A-10-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-15426-A-10-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 26776**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-1	SS01	Total/NA	Solid	8015B NM	26772
890-2369-2	SS02	Total/NA	Solid	8015B NM	26772
890-2369-3	SS03	Total/NA	Solid	8015B NM	26772
890-2369-4	SS04	Total/NA	Solid	8015B NM	26772
MB 880-26772/1-A	Method Blank	Total/NA	Solid	8015B NM	26772
LCS 880-26772/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	26772
LCSD 880-26772/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	26772
880-15426-A-10-B MS	Matrix Spike	Total/NA	Solid	8015B NM	26772
880-15426-A-10-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	26772

#### **Analysis Batch: 26778**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-5	SS05	Total/NA	Solid	8015B NM	26772

# Analysis Batch: 26884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-1	SS01	Total/NA	Solid	8015 NM	
890-2369-2	SS02	Total/NA	Solid	8015 NM	
890-2369-3	SS03	Total/NA	Solid	8015 NM	
890-2369-4	SS04	Total/NA	Solid	8015 NM	
890-2369-5	SS05	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 26795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-1	SS01	Soluble	Solid	DI Leach	
890-2369-2	SS02	Soluble	Solid	DI Leach	
890-2369-3	SS03	Soluble	Solid	DI Leach	
890-2369-4	SS04	Soluble	Solid	DI Leach	
890-2369-5	SS05	Soluble	Solid	DI Leach	
MB 880-26795/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-26795/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-26795/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2367-A-3-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2367-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 26859**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2369-1	SS01	Soluble	Solid	300.0	26795
890-2369-2	SS02	Soluble	Solid	300.0	26795
890-2369-3	SS03	Soluble	Solid	300.0	26795
890-2369-4	SS04	Soluble	Solid	300.0	26795
890-2369-5	SS05	Soluble	Solid	300.0	26795
MB 880-26795/1-A	Method Blank	Soluble	Solid	300.0	26795
LCS 880-26795/2-A	Lab Control Sample	Soluble	Solid	300.0	26795

 Client: Ensolum
 Job ID: 890-2369-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

**HPLC/IC** (Continued)

**Analysis Batch: 26859 (Continued)** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-26795/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	26795
890-2367-A-3-B MS	Matrix Spike	Soluble	Solid	300.0	26795
890-2367-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	26795

130

Date Received: 06/02/22 11:30

### Lab Chronicle

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

**Client Sample ID: SS01** Lab Sample ID: 890-2369-1 Date Collected: 05/31/22 12:00

**Matrix: Solid** 

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 5035 Total/NA Prep 5.04 g 5 mL 26988 06/07/22 08:57 EL XEN MID Total/NA Analysis 8021B 500 5 mL 5 mL 26971 06/07/22 21:13 MR XEN MID Total/NA Prep 5035 5.01 g 5 mL 26838 06/03/22 15:09 EL XEN MID Total/NA Analysis 8021B 50 26862 06/05/22 22:05 SM XEN MID Total/NA Analysis Total BTEX 1 27089 06/08/22 12:08 SM XEN MID 8015 NM Total/NA Analysis 26884 06/06/22 09:13 SM XEN MID Total/NA 8015NM Prep 10.03 g 26772 06/03/22 08:31 DM XEN MID Prep 10 mL Total/NA Analysis 8015B NM 5 26776 06/04/22 08:16 SM XEN MID Soluble DI Leach 5.03 g 50 mL 26795 06/03/22 09:55 СН XEN MID Leach Soluble Analysis 300.0 5 26859 06/04/22 22:26 СН XEN MID

Client Sample ID: SS02 Lab Sample ID: 890-2369-2

Date Collected: 05/31/22 12:05 Matrix: Solid

Date Received: 06/02/22 11:30

	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	26838	06/03/22 15:09	EL	XEN MIC
Total/NA	Analysis	8021B		50			26862	06/05/22 22:26	SM	XEN MID
Total/NA	Prep	5035			4.99 g	5 mL	26930	06/06/22 15:00	EL	XEN MID
Total/NA	Analysis	8021B		500			26972	06/07/22 18:33	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27089	06/08/22 12:08	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26884	06/06/22 09:13	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	26772	06/03/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		5			26776	06/04/22 08:37	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	26795	06/03/22 09:55	СН	XEN MID
Soluble	Analysis	300.0		5			26859	06/04/22 19:32	CH	XEN MII

**Client Sample ID: SS03** Lab Sample ID: 890-2369-3

Date Collected: 05/31/22 12:10 Date Received: 06/02/22 11:30

	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	27007	06/07/22 11:40	MR	XEN MID
Total/NA	Analysis	8021B		1	0 mL	1.0 mL	26972	06/08/22 01:22	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27089	06/08/22 12:08	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26884	06/06/22 09:13	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	26772	06/03/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		10			26776	06/04/22 08:58	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	26795	06/03/22 09:55	CH	XEN MID
Soluble	Analysis	300.0		10			26859	06/04/22 19:38	CH	XEN MID

**Eurofins Carlsbad** 

**Matrix: Solid** 

# **Lab Chronicle**

Client: Ensolum Job ID: 890-2369-1 Project/Site: Zia Hills 19-1 SDG: 03D2024049

Client Sample ID: SS04

Lab Sample ID: 890-2369-4

Matrix: Solid

Date Collected: 05/31/22 12:15 Date Received: 06/02/22 11:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	26838	06/03/22 15:09	EL	XEN MID
Total/NA	Analysis	8021B		50			26862	06/05/22 22:46	SM	XEN MID
Total/NA	Prep	5035			5.00 g	5 mL	26930	06/06/22 15:00	EL	XEN MID
Total/NA	Analysis	8021B		500			26972	06/07/22 18:54	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27089	06/08/22 12:08	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26884	06/06/22 09:13	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	26772	06/03/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		10			26776	06/04/22 09:19	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	26795	06/03/22 09:55	CH	XEN MID
Soluble	Analysis	300.0		10			26859	06/04/22 19:44	CH	XEN MID

**Client Sample ID: SS05** Lab Sample ID: 890-2369-5

Date Collected: 05/31/22 12:20 Matrix: Solid

Date Received: 06/02/22 11:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	26838	06/03/22 15:09	EL	XEN MID
Total/NA	Analysis	8021B		50			26862	06/05/22 23:07	SM	XEN MID
Total/NA	Prep	5035			5.05 g	5 mL	26930	06/06/22 15:00	EL	XEN MID
Total/NA	Analysis	8021B		500			26972	06/07/22 19:14	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27089	06/08/22 12:08	SM	XEN MID
Total/NA	Analysis	8015 NM		1			26884	06/06/22 09:13	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	26772	06/03/22 08:31	DM	XEN MID
Total/NA	Analysis	8015B NM		10			26778	06/04/22 08:16	SM	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	26795	06/03/22 09:55	СН	XEN MID
Soluble	Analysis	300.0		5			26859	06/04/22 19:50	CH	XEN MID

#### Laboratory References:

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

# **Accreditation/Certification Summary**

 Client: Ensolum
 Job ID: 890-2369-1

 Project/Site: Zia Hills 19-1
 SDG: 03D2024049

# **Laboratory: Eurofins Midland**

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

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>
Texas	NE	ELAP	T104704400-21-22	06-30-22
The following analytes	are included in this report, bu	it the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for v
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	

3

3

\_4

6

8

10

12

13

14

# **Method Summary**

Job ID: 890-2369-1 Client: Ensolum Project/Site: Zia Hills 19-1

SDG: 03D2024049

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

### **Protocol References:**

ASTM = ASTM International

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

### Laboratory References:

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

# Sample Summary

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-2369-1

SDG: 03D2024049

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2369-1	SS01	Solid	05/31/22 12:00	06/02/22 11:30	0.5'
890-2369-2	SS02	Solid	05/31/22 12:05	06/02/22 11:30	0.5'
890-2369-3	SS03	Solid	05/31/22 12:10	06/02/22 11:30	0.5'
890-2369-4	SS04	Solid	05/31/22 12:15	06/02/22 11:30	0.5'
890-2369-5	SS05	Solid	05/31/22 12:20	06/02/22 11:30	0.5'

4

**5** 

8

4.6

11

16

12

Circle Method(s) and Metal(s) to be analyzed

Total 200.7 / 6010

200.8 / 6020:

8RCRA 13PPM Texas 11 Al

Sb As Ba

TCLP / SPLP 6010: 8RCRA

votice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Euro

Eurofins Xenco. A minimum charge of \$86.00 will be applied to each project and a charge of \$5 for each sample submitted to E service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or exp

Received by: (Signature)

6932130

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Revised Date 08/25/2020 Rev 2020 2

Relinquished by: (Signature)



Address:

601 N Marienfeld St Suite 400

Address: City, State ZIP:

Bill to: (if different)

Company Name:

City, State ZIP:

Project Manager:

Kalei Jennings Ensolum, LLC

Company Name:

Phone:

817-683-2503 Midland, TX 79701

Email: kjennings@ensolum.com

**Turn Around** 

Rush

Code

SAMPLE RECEIPT

Yes No

Wet Ice:

**(**€

S

**Parameters** 

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

Samples Received Intact:

cooler Custody Seals:

Yes No (NIA Tes No Temp Blank:

Correction Factor: Temperature Reading:

Thermometer ID:

500-mg

Sample Custody Seals:

Yes

NO VIA

Corrected Temperature:

00

otal Containers:

Sample Identification

Matrix

Sampled

Sampled

12:00

0.5 0.5 Date

Time

Depth

Cont

Grab/

# of

SS04 SS03 SS02 SS01

SS05

S S S S

05.31.22

12:20 12:15 12:10 12:05

0.5 0.5 0.5

Grab/

Grab/ Grab/ Grab/ Grab/ Comp

05.31.22

05.31.22 05.31.22 05.31.22 Sampler's Name: Project Location: Project Number: Project Name:

Gilbert Moreno

Due Date: ☑ Routine

5 Day TAT

03D2024049 Zia Hills 19-1

# Chain of Custody

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

32) 704-5440, San Antonio, TX (210) 509-3334	Work Order No:	
(915) 585-3443, Lubbock, TX (806) 794-1296		
575) 392-7550, Carlsbad, NM (575) 988-3199	www.xenco.com Page ( of )	
Kalei Jennigns	Con	
Ensolum, LLC	Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
601 N Marienfeld St Suite 400	State of Project:	
Midland, TX 79701	Reporting: Level II \(\text{Level III}\) \(\text{PST/UST}\) TRRP \(\text{T}\) Level IV	
com	Deliverables: EDD ADaPT Other:	
ANALYSIS	ANALYSIS REQUEST Preservative Codes	
	None: NO DI Water: H <sub>2</sub> O	
	Cool: Cool MeOH: Me	
	HCL: HC HNO <sub>3</sub> : HN	
	H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na	
.0)	H₃PO₄; HP	
: 30	Nano Ca. Nano	f 3
E CO 2369 Chain of Custody		8 c
3021		ge 2
CHLOR	Sample Comments	Pa
×		
×		
×		
×		
× ×		_
		D1
		22.
		2.
		023
Sb As Ba Be B Cd Ca Cr Co Cu Fe	Pb Mg Mn Mo Ni K Se A	1 /2
Sb As Ba Be Cd Cr Co Cu Pb Mn	Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471	(1)
company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions	actors. It assigns standard terms and conditions	
any losses or expenses incurred by the client if such losses are due to circumstances beyond the control a submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiat	any losses or expenses incurred by the client if such losses are due to circumstances beyond the control esubmitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.	

**Eurofins Carlsbad** 

1089 N Canal St.	_	Shain c	Chain of Custody Record	odv R	900	2													_	8 <b>3</b> 0	💸 eurofins		Environment Testing
Callsbad, NW 60220 Phone, 575-988-3199 Fax 575-988-3199				,																			America
Client Information (Sub Contract Lab)	Sampler			Lab PM Kramer		Jessica.						0	Carrier Tracking No(s)	Track	ng N	(s)				<b>8</b> S	COC No 890-776 1		
Client Contact: Shipping/Receiving	Phone			E-Mail Jessi	E-Mail Jessica Kramer@et.eurofinsus co	mer(	))et.e	urofi	nsus	com		70	State of Origin New Mexico	Origi	اد ق				. 1	Page: Page	Page Page 1 of 1		
Company  Eurofins Environment Testing South Centr					Accreditations Requ	ations	Requ	ired (S	Required (See note):	te):										996 gop	Job #: 890-2369-1		
Address. 1211 W Florida Ave	Due Date Requested 6/8/2022	8							Ą	Analys	/sis R	Requested	est	ا ۵						고	Preservation Codes	8	- 1
City Midland	TAT Requested (days)	ays)										→		_		_		1		O Ø ≻	HOL NaOH	<u> </u>	N None O AsNaO2
State Zip: TX, 79701	<u> </u>				<u>Carried a</u> Tanàna I	TPH															Nitric Acid		P Na2O4S Q Na2SO3 D Na2SO3
Phone: 432-704-5440(Tel)	P0#				<u>Mariji (dil</u> Gastruditani (	) Full		le											Maria de la compansión de		MeOH Amchlor		R Nazszos S H2SO4 T TSP Dodecahydrate
Email	#O#				and and any and any and a	p (MOI		Chlorid	EX										\$		Ice DI Water		
Project Name Zia Hills 19-1	Project #: 89000094				112W	_S_Pre		EACH	OD) B1										ainer	ᆫᆽ	EDTA EDA	<b>.</b>	YV PR 4-3 Y Trizma Z other (specify)
Site:	SSOW#:				Access to the last	015NM		D/DI_L	Calc (M	v									of con	Q	Other:		
			Sample Type	Matrix (w=water	Filtered S rm MS/M	OD_NM/8	OD_Calc	RGFM_28	/6036FP_C	BTEX_GC									Number				
Sample Identification - Client ID (Lab ID)	Sample Date	Time	(C≔Comp, G≕grab) в	<u>-)</u>	0.000000710000	8015	8015	300_0	80211	Total									Tota		Special	ns i	Special Instructions/Note
	N		Preservation Code:	on Code:	Ź	lege d	e diesel					is a second	- Japan						X	1		V	
SS01 (890-2369-1)	5/31/22	Mountain		Solid	-	×	×	×	×	×					<u> </u>	ļ			1996				
SS02 (890-2369-2)	5/31/22	12 05 Mountain		Solid		×	×	×	×	×													
SS03 (890-2369-3)	5/31/22	12 10 Mountain		Solid		×	×	×	×	×									, <b>L</b>				
SS04 (890-2369-4)	5/31/22	12 15 Mountain		Solid		×	×	×	×	×									, max.			- 1	
\$\$05 (890-2369-5)	5/31/22	12 20 Mountain		Solid		×	×	×	×	×				<del>                                     </del>	<b> </b> -				4				
											ļ		$\sqcup$			$\sqcup \sqcup$							
					_									$\perp$						north ma desti			
																					***************************************		
Note Since laboratory accreditations are subject to change Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central. LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central. LLC attention immediately. If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central. LLC.	t Testing South Centr ove for analysis/tests ntral, LLC attention in	al LLC places in the control of the	the ownership on alyzed the san alyzed the san all requested acc	f method analy nples must be a reditations are	/te & ac shipped current	credita back t to date	ation control of the	omplia Eurofi m the	ance u ns Env signe	pon oi /ironm d Chai	it subcent Te	contra sting i	t labo South	ratorie Centro ling to	said	nis sa Clabo comp	mple orator lican	ship y or be to	men other	is for	orwarded unde ructions will be Environment T	r chai prov estin	in-of-custody If the ided Any changes to g South Central LLC.
Possible Hazard Identification Unconfirmed					Sa	Sample Disposal ( A fee	<b>le Disposal ( A f</b> Return To Client	osa.	Clien	fee n	may b	be assessed if samples are	assessed if san Disposal By Lab		san	ple	_as	٦ĕ	Arc	e e	retained longer than 1	11 11	month)
Deliverable Requested   II III IV Other (specify)	Primary Deliverable Rank	able Rank 2			Spo	Special Instructions/QC Requirements	Instru	ctio	ns/Q	Re	uire	ment	°,		ı	ı							***************************************
Empty Kit Relinquished by		Date			Time	۲							_	Method of Shipment:	of S	ipme	ř.						
Relinquished by UC (NA)	Date/Time·		Q	Company		Pede		۲۷								Date/Time	ime						Company
Reinquished by	Date/Time		0	Company		Receiv	ived by	y.								Date/Time	ime						Company
Reinquisned by	Date/Time			Company		Rece	Received by:	Υ,							L_	Date/Time	ime:						Company
						Coole	err len	iperat	ure(s)	Cooler I emperature(s) "C and Other Remarks	Othe	r Ren	arks.										Ver 06/08/2021
																							Ver: 06/08/2021

eurofins Environment Testing America

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2369-1 SDG Number: 03D2024049

Login Number: 2369 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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

## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2369-1

SDG Number: 03D2024049

Login Number: 2369 **List Source: Eurofins Midland** List Number: 2

List Creation: 06/03/22 11:41 AM

Creator: Teel, Brianna

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

<6mm (1/4").

# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2977-1

Laboratory Sample Delivery Group: Lea County NM

Client Project/Site: Zia Hills 19-1

Revision: 2

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Josh Adams

MEAMER

Authorized for release by: 10/19/2022 1:15:43 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

results through
EOL

Have a Question?

····· Links ······

**Review your project** 

Ask—The Expert

Visit us at:

www.eurofinsus.com/Env
Released to Imaging: 6/21/2023 2:22:52 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

1

2

4

6

Q

9

4 4

12

13

Client: Ensolum
Project/Site: Zia Hills 19-1
Laboratory Job ID: 890-2977-1
SDG: Lea County NM

# **Table of Contents**

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	5
Surrogate Summary	7
QC Sample Results	8
QC Association Summary	12
Lab Chronicle	14
Certification Summary	15
Method Summary	16
Sample Summary	17
Chain of Custody	18
Receint Checklists	19

2

3

4

6

8

10

40

13

14

# **Definitions/Glossary**

Client: Ensolum Job ID: 890-2977-1 Project/Site: Zia Hills 19-1 SDG: Lea County NM

## **Qualifiers**

**GC VOA** Qualifier

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** 

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

### GC Semi VOA

Qualifier **Qualifier Description** LCS/LCSD RPD exceeds control limits.

U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

U Indicates the analyte was analyzed for but not detected.

**Glossary** 

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

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

%R Percent Recovery Contains Free Liquid **CFL** 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) Limit of Detection (DoD/DOE) LOD LOQ Limit of Quantitation (DoD/DOE)

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

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

**RER** Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

**TNTC** Too Numerous To Count

### **Case Narrative**

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-2977-1

SDG: Lea County NM

Job ID: 890-2977-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2977-1

### REVISION

The report being provided is a revision of the original report sent on 9/20/2022. The report (revision 2) is being revised due to Per client eamil, requesting sample ID changes.

Report revision history

The report being provided is a revision of the original report sent on 9/20/2022. The report (revision 2) is being revised due to Per client eamil, requesting sample ID changes.

Revision 1 - 9/21/2022 - Reason - Per client email, need project name revised to match COC.

The samples were received on 9/15/2022 9:36 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-34689 and analytical batch 880-34832 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: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-34673 and analytical batch 880-34714 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.

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

**Eurofins Carlsbad** 10/19/2022 (Rev. 2)

Job ID: 890-2977-1

Client: Ensolum Project/Site: Zia Hills 19-1

SDG: Lea County NM

**Client Sample ID: FS01A** Lab Sample ID: 890-2977-1 Date Collected: 09/14/22 14:30 **Matrix: Solid** Date Received: 09/15/22 09:36

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00200	U	0.00200	mg/Kg		09/19/22 12:00	09/20/22 00:30	
Toluene	0.0151		0.00200	mg/Kg		09/19/22 12:00	09/20/22 00:30	
Ethylbenzene	0.0485		0.00200	mg/Kg		09/19/22 12:00	09/20/22 00:30	
m-Xylene & p-Xylene	0.336		0.00401	mg/Kg		09/19/22 12:00	09/20/22 00:30	
o-Xylene	0.125		0.00200	mg/Kg		09/19/22 12:00	09/20/22 00:30	
Xylenes, Total	0.461		0.00401	mg/Kg		09/19/22 12:00	09/20/22 00:30	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	106		70 - 130			09/19/22 12:00	09/20/22 00:30	
1,4-Difluorobenzene (Surr)	72		70 - 130			09/19/22 12:00	09/20/22 00:30	
Method: TAL SOP Total BTE	X - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	0.525		0.00401	mg/Kg			09/20/22 09:49	
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
	Result 883	Qualifier	<b>RL</b> 50.0	Unit mg/Kg	D	Prepared	Analyzed 09/19/22 15:34	
Total TPH	883		50.0		<u>D</u>	Prepared		
Total TPH Method: SW846 8015B NM -	883 Diesel Range		50.0		<u>D</u> 	Prepared Prepared		Dil Fa
Total TPH  Method: SW846 8015B NM - Analyte Gasoline Range Organics	883 Diesel Range Result	Organics Qualifier	50.0 (DRO) (GC)	mg/Kg			09/19/22 15:34	Dil Fa
Total TPH  Method: SW846 8015B NM - Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	883 Diesel Range Result	Organics Qualifier	50.0 (DRO) (GC)	mg/Kg Unit		Prepared	09/19/22 15:34  Analyzed	Dil Fa
Method: SW846 8015B NM - Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over	Diesel Range Result 157	Organics Qualifier	50.0 (DRO) (GC) RL 50.0	mg/Kg  Unit mg/Kg		Prepared 09/16/22 11:41	09/19/22 15:34  Analyzed  09/18/22 19:07	Dil Fa
Method: SW846 8015B NM - Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)	Diesel Range Result 157 624	Organics Qualifier *1	50.0 (DRO) (GC) RL 50.0 50.0	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 09/16/22 11:41 09/16/22 11:41	09/19/22 15:34  Analyzed 09/18/22 19:07 09/18/22 19:07	
Method: SW846 8015B NM - Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate	883 Diesel Range Result 157 624 102	Organics Qualifier *1	50.0 (DRO) (GC) RL 50.0 50.0	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 09/16/22 11:41 09/16/22 11:41 09/16/22 11:41	09/19/22 15:34  Analyzed 09/18/22 19:07 09/18/22 19:07	Dil Fa
Method: SW846 8015B NM - Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	Poiesel Range Result 157 624 102 %Recovery	Organics Qualifier *1	50.0  (DRO) (GC)  RL  50.0  50.0  50.0  Limits	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 09/16/22 11:41 09/16/22 11:41 09/16/22 11:41 Prepared	09/19/22 15:34  Analyzed 09/18/22 19:07 09/18/22 19:07 09/18/22 19:07  Analyzed	Dil Fa
Analyte Total TPH  Method: SW846 8015B NM - 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: MCAWW 300.0 - Ar	883 Diesel Range Result 157 624 102  **Recovery 93 93 93	Qualifier *1  Qualifier	50.0  (DRO) (GC)  RL  50.0  50.0  50.0  Limits  70 - 130  70 - 130	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 09/16/22 11:41 09/16/22 11:41 09/16/22 11:41  Prepared 09/16/22 11:41	09/19/22 15:34  Analyzed 09/18/22 19:07 09/18/22 19:07  09/18/22 19:07  Analyzed 09/18/22 19:07	Dil Fa

**Client Sample ID: FS02A** Lab Sample ID: 890-2977-2 **Matrix: Solid** 

24.8

mg/Kg

209

Date Collected: 09/14/22 14:35 Date Received: 09/15/22 09:36

Sample Depth: 1

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		09/19/22 12:00	09/20/22 00:50	1
Toluene	0.0183		0.00201	mg/Kg		09/19/22 12:00	09/20/22 00:50	1
Ethylbenzene	0.0459		0.00201	mg/Kg		09/19/22 12:00	09/20/22 00:50	1
m-Xylene & p-Xylene	0.481		0.00402	mg/Kg		09/19/22 12:00	09/20/22 00:50	1
o-Xylene	0.202		0.00201	mg/Kg		09/19/22 12:00	09/20/22 00:50	1
Xylenes, Total	0.683		0.00402	mg/Kg		09/19/22 12:00	09/20/22 00:50	1

**Eurofins Carlsbad** 

09/20/22 00:34

**Matrix: Solid** 

# **Client Sample Results**

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-2977-1

SDG: Lea County NM

Client Sample ID: FS02A

Date Collected: 09/14/22 14:35 Date Received: 09/15/22 09:36

Sample Depth: 1

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	152	S1+	70 - 130			09/19/22 12:00	09/20/22 00:50	1
1,4-Difluorobenzene (Surr)	92		70 - 130			09/19/22 12:00	09/20/22 00:50	1
- Method: TAL SOP Total BTI	EX - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.747		0.00402	mg/Kg			09/20/22 09:49	1
- Method: SW846 8015 NM - I	Diesel Range (	Organics (	DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	981		50.0	mg/Kg			09/19/22 15:34	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	140	*1	50.0	mg/Kg		09/16/22 11:41	09/18/22 19:28	1
Diesel Range Organics (Over C10-C28)	722		50.0	mg/Kg		09/16/22 11:41	09/18/22 19:28	1
Oll Range Organics (Over C28-C36)	119		50.0	mg/Kg		09/16/22 11:41	09/18/22 19:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		70 - 130			09/16/22 11:41	09/18/22 19:28	1
o-Terphenyl	98		70 - 130			09/16/22 11:41	09/18/22 19:28	1

	Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble										
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Į	Chloride	203		25.0	mg/Kg			09/20/22 00:39	5		

**Eurofins Carlsbad** 

3

5

7

9

11

13

14

# **Surrogate Summary**

Client: Ensolum Job ID: 890-2977-1
Project/Site: Zia Hills 19-1 SDG: Lea County NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

			Percen	t Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2977-1	FS01A	106	72	
890-2977-2	FS02A	152 S1+	92	
890-2984-A-1-F MS	Matrix Spike	112	103	
890-2984-A-1-G MSD	Matrix Spike Duplicate	66 S1-	112	
LCS 880-34689/1-A	Lab Control Sample	105	100	
LCSD 880-34689/2-A	Lab Control Sample Dup	102	103	
MB 880-34689/5-B	Method Blank	101	117	

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

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

Matrix: Solid Prep Type: Total/NA

			Perce
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-2971-A-1-C MS	Matrix Spike	87	77
890-2971-A-1-D MSD	Matrix Spike Duplicate	85	77
890-2977-1	FS01A	93	93
890-2977-2	FS02A	97	98
LCS 880-34673/2-A	Lab Control Sample	82	90
LCSD 880-34673/3-A	Lab Control Sample Dup	86	93
MB 880-34673/1-A	Method Blank	113	122

**Surrogate Legend** 

1CO = 1-Chlorooctane OTPH = o-Terphenyl

**Eurofins Carlsbad** 

Released to Imaging: 6/21/2023 2:22:52 PM

Client: Ensolum Job ID: 890-2977-1 Project/Site: Zia Hills 19-1

SDG: Lea County NM

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

Lab Sample ID: MB 880-34689/5-B

**Matrix: Solid** 

**Analysis Batch: 34832** 

**Client Sample ID: Method Blank** 

**Prep Type: Total/NA** 

Prep Batch: 34689

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		09/16/22 15:45	09/19/22 17:24	1
Toluene	<0.00200	U	0.00200	mg/Kg		09/16/22 15:45	09/19/22 17:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		09/16/22 15:45	09/19/22 17:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		09/16/22 15:45	09/19/22 17:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		09/16/22 15:45	09/19/22 17:24	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		09/16/22 15:45	09/19/22 17:24	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	09/16/22 15:45 09/19/22 17:24	1
1,4-Difluorobenzene (Surr)	117		70 - 130	09/16/22 15:45 09/19/22 17:24	1

**Client Sample ID: Lab Control Sample** 

Matrix: Solid

**Analysis Batch: 34832** 

Lab Sample ID: LCS 880-34689/1-A

**Prep Type: Total/NA** Prep Batch: 34689

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09148		mg/Kg		91	70 - 130	
Toluene	0.100	0.09608		mg/Kg		96	70 - 130	
Ethylbenzene	0.100	0.09681		mg/Kg		97	70 - 130	
m-Xylene & p-Xylene	0.200	0.2046		mg/Kg		102	70 - 130	
o-Xylene	0.100	0.1027		mg/Kg		103	70 - 130	

LCS LCS

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

Lab Sample ID: LCSD 880-34689/2-A **Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid** 

**Analysis Batch: 34832** 

Prep Type: Total/NA Prep Batch: 34689

Spike	LCSD LCSI	D		%Rec		RPD
Added	Result Qual	ifier Unit	D %Rec	Limits	RPD	Limit
0.100	0.09765	mg/Kg	98	70 - 130	7	35
0.100	0.09126	mg/Kg	91	70 - 130	5	35
0.100	0.08993	mg/Kg	90	70 - 130	7	35
0.200	0.1909	mg/Kg	95	70 - 130	7	35
0.100	0.09752	mg/Kg	98	70 - 130	5	35
	Added 0.100 0.100 0.100 0.200	Added         Result         Qual           0.100         0.09765           0.100         0.09126           0.100         0.08993           0.200         0.1909	Added         Result         Qualifier         Unit           0.100         0.09765         mg/Kg           0.100         0.09126         mg/Kg           0.100         0.08993         mg/Kg           0.200         0.1909         mg/Kg	Added         Result         Qualifier         Unit         D         %Rec           0.100         0.09765         mg/Kg         98           0.100         0.09126         mg/Kg         91           0.100         0.08993         mg/Kg         90           0.200         0.1909         mg/Kg         95	Added         Result         Qualifier         Unit         D         %Rec         Limits           0.100         0.09765         mg/Kg         98         70 - 130           0.100         0.09126         mg/Kg         91         70 - 130           0.100         0.08993         mg/Kg         90         70 - 130           0.200         0.1909         mg/Kg         95         70 - 130	Added         Result         Qualifier         Unit         D         %Rec         Limits         RPD           0.100         0.09765         mg/Kg         98         70 - 130         7           0.100         0.09126         mg/Kg         91         70 - 130         5           0.100         0.08993         mg/Kg         90         70 - 130         7           0.200         0.1909         mg/Kg         95         70 - 130         7

LCSD LCSD

Surrogate	%Recovery 0	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1.4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 890-2984-A-1-F MS

**Matrix: Solid** 

**Analysis Batch: 34832** 

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

Prep Batch: 34689

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U F1	0.0998	0.08170		mg/Kg		82	70 - 130	
Toluene	<0.00200	U F2 F1	0.0998	0.07915		mg/Kg		79	70 - 130	

Prep Batch: 34689

# QC Sample Results

Client: Ensolum Job ID: 890-2977-1 Project/Site: Zia Hills 19-1 SDG: Lea County NM

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

Lab Sample ID: 890-2984-A-1-F MS Client Sample ID: Matrix Spike **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 34832** 

-	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00200	U F2 F1	0.0998	0.07827		mg/Kg		78	70 - 130	
m-Xylene & p-Xylene	<0.00399	U F2 F1	0.200	0.1597		mg/Kg		80	70 - 130	
o-Xylene	<0.00200	U F2 F1	0.0998	0.08156		mg/Kg		82	70 - 130	

MS MS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 70 - 130 112 1,4-Difluorobenzene (Surr) 103 70 - 130

Lab Sample ID: 890-2984-A-1-G MSD

**Matrix: Solid** 

o-Xylene

**Analysis Batch: 34832** 

**Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA Prep Batch: 34689

0.05598 F2 F1

mg/Kg

56

70 - 130

Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 0.100 0.06928 F1 70 - 130 35 Benzene <0.00200 UF1 mg/Kg 69 16 Toluene 0.100 70 - 130 37 35 <0.00200 U F2 F1 0.05454 F2 F1 mg/Kg 54 43 Ethylbenzene <0.00200 U F2 F1 0.100 0.05045 F2 F1 mg/Kg 50 70 - 130 35 m-Xylene & p-Xylene <0.00399 U F2 F1 0.201 0.1004 F2 F1 50 70 - 130 46 35 mg/Kg

0.100

MSD MSD Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 66 S1-70 - 130 1,4-Difluorobenzene (Surr) 112 70 - 130

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

<0.00200 U F2 F1

122

L

M

Lab Sample ID: MB 880-34673/1-A	Client Sample ID: Method Blank
Matrix: Solid	Prep Type: Total/NA
Analysis Batch: 34714	Prep Batch: 34673
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		09/16/22 11:40	09/18/22 10:36	1
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		09/16/22 11:40	09/18/22 10:36	1
C10-C28) Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/16/22 11:40	09/18/22 10:36	1

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1-Chlorooctane 70 - 130 09/16/22 11:40 09/18/22 10:36 113

70 - 130

Lab Sample ID: LCS 880-34673/2-A

o-Terphenyl

C10-C28)

Matrix: Solid							Prep Typ	e: Total/NA
Analysis Batch: 34714							Prep B	atch: 34673
-	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	700.8		mg/Kg		70	70 - 130	
Diesel Range Organics (Over	1000	811.2		mg/Kg		81	70 - 130	

**Eurofins Carlsbad** 

37

**Client Sample ID: Lab Control Sample** 

09/16/22 11:40 09/18/22 10:36

Client: Ensolum Job ID: 890-2977-1 SDG: Lea County NM Project/Site: Zia Hills 19-1

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

Lab Sample ID: LCS 880-34673/2-A

**Matrix: Solid** 

**Analysis Batch: 34714** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 34673

LCS LCS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 82 70 - 130 o-Terphenyl 90 70 - 130

Lab Sample ID: LCSD 880-34673/3-A

Lab Sample ID: 890-2971-A-1-C MS

**Matrix: Solid** 

**Analysis Batch: 34714** 

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

**Prep Type: Total/NA** 

Prep Batch: 34673

LCSD LCSD RPD %Rec Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics 1000 880.9 \*1 mg/Kg 88 70 - 130 23 20 (GRO)-C6-C10 1000 Diesel Range Organics (Over 808.4 mg/Kg 81 70 - 130 0 20 C10-C28)

**Matrix: Solid** 

**Analysis Batch: 34714** 

LCSD LCSD

Surrogate	%Recovery Qualifie	r Limits
1-Chlorooctane	86	70 - 130
o-Terphenyl	93	70 - 130

**Client Sample ID: Matrix Spike** 

**Prep Type: Total/NA** 

Prep Batch: 34673

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec <49.9 U \*1 Gasoline Range Organics 996 1095 mg/Kg 110 70 - 130 (GRO)-C6-C10 996 Diesel Range Organics (Over 412 1146 mg/Kg 74 70 - 130

Spike

Added

999

999

MSD MSD

1040

1155

Result Qualifier

Unit

mg/Kg

mg/Kg

C10-C28)

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 87 o-Terphenyl 77 70 - 130

Lab Sample ID: 890-2971-A-1-D MSD **Matrix: Solid** 

**Analysis Batch: 34714** 

Gasoline Range Organics

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

74

Prep Batch: 34673

20

%Rec **RPD** RPD Limits Limit %Rec 104 70 - 130 5 20

70 - 130

Diesel Range Organics (Over C10-C28)

(GRO)-C6-C10

Analyte

MSD MSD

Sample Sample

<49.9 U \*1

412

Result Qualifier

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	77		70 - 130

# QC Sample Results

Client: Ensolum Job ID: 890-2977-1 SDG: Lea County NM Project/Site: Zia Hills 19-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-34662/1-A

Client Sample ID: Method Blank

**Prep Type: Soluble** 

**Analysis Batch: 34856** 

**Matrix: Solid** 

MB MB

Analyte Result Qualifier RL Unit Analyzed Dil Fac D Prepared 5.00 09/19/22 22:33 Chloride <5.00 U mg/Kg

Lab Sample ID: LCS 880-34662/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Analysis Batch: 34856** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 90 - 110 250.7 mg/Kg 100

Lab Sample ID: LCSD 880-34662/3-A Client Sample ID: Lab Control Sample Dup

**Prep Type: Soluble** 

**Client Sample ID: Matrix Spike Duplicate** 

**Matrix: Solid** 

**Analysis Batch: 34856** 

Spike LCSD LCSD %Rec RPD Added Result Qualifier Limits **RPD** Limit **Analyte** Unit %Rec Chloride 250 253.0 101 90 - 110 mg/Kg

Lab Sample ID: 890-2974-A-1-B MS **Client Sample ID: Matrix Spike Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 34856** 

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 102 251 342.5 mg/Kg 96 90 - 110

Lab Sample ID: 890-2974-A-1-C MSD

**Matrix: Solid** 

**Analysis Batch: 34856** 

MSD MSD RPD Sample Sample Spike %Rec Analyte Result Qualifier Added Unit Limits RPD Result Qualifier %Rec Limit Chloride 102 251 342.1 96 20 mg/Kg 90 - 110 0

# **QC Association Summary**

Client: Ensolum Project/Site: Zia Hills 19-1

Job ID: 890-2977-1 SDG: Lea County NM

**GC VOA** 

Prep Batch: 34689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2977-1	FS01A	Total/NA	Solid	5035	
890-2977-2	FS02A	Total/NA	Solid	5035	
MB 880-34689/5-B	Method Blank	Total/NA	Solid	5035	
LCS 880-34689/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-34689/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2984-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2984-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

**Analysis Batch: 34832** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2977-1	FS01A	Total/NA	Solid	8021B	34689
890-2977-2	FS02A	Total/NA	Solid	8021B	34689
MB 880-34689/5-B	Method Blank	Total/NA	Solid	8021B	34689
LCS 880-34689/1-A	Lab Control Sample	Total/NA	Solid	8021B	34689
LCSD 880-34689/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	34689
890-2984-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	34689
890-2984-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	34689

**Analysis Batch: 34920** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2977-1	FS01A	Total/NA	Solid	Total BTEX	
890-2977-2	FS02A	Total/NA	Solid	Total BTEX	

**GC Semi VOA** 

Prep Batch: 34673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2977-1	FS01A	Total/NA	Solid	8015NM Prep	
890-2977-2	FS02A	Total/NA	Solid	8015NM Prep	
MB 880-34673/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-34673/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-34673/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2971-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2971-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

**Analysis Batch: 34714** 

Lab Sample ID 890-2977-1	Client Sample ID FS01A	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 34673
890-2977-2	FS02A	Total/NA	Solid	8015B NM	34673
MB 880-34673/1-A	Method Blank	Total/NA	Solid	8015B NM	34673
LCS 880-34673/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	34673
LCSD 880-34673/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	34673
890-2971-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	34673
890-2971-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	34673

**Analysis Batch: 34865** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2977-1	FS01A	Total/NA	Solid	8015 NM	
890-2977-2	FS02A	Total/NA	Solid	8015 NM	

# **QC Association Summary**

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-2977-1

SDG: Lea County NM

# HPLC/IC

## Leach Batch: 34662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2977-1	FS01A	Soluble	Solid	DI Leach	
890-2977-2	FS02A	Soluble	Solid	DI Leach	
MB 880-34662/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-34662/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-34662/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2974-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2974-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## **Analysis Batch: 34856**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2977-1	FS01A	Soluble	Solid	300.0	34662
890-2977-2	FS02A	Soluble	Solid	300.0	34662
MB 880-34662/1-A	Method Blank	Soluble	Solid	300.0	34662
LCS 880-34662/2-A	Lab Control Sample	Soluble	Solid	300.0	34662
LCSD 880-34662/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	34662
890-2974-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	34662
890-2974-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	34662

1

## Lab Chronicle

Client: Ensolum Job ID: 890-2977-1 Project/Site: Zia Hills 19-1 SDG: Lea County NM

Client Sample ID: FS01A

Date Collected: 09/14/22 14:30 Date Received: 09/15/22 09:36

Lab Sample ID: 890-2977-1

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	34689	09/19/22 12:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	34832	09/20/22 00:30	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			34920	09/20/22 09:49	AJ	EET MID
Total/NA	Analysis	8015 NM		1			34865	09/19/22 15:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	34673	09/16/22 11:41	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	34714	09/18/22 19:07	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	34662	09/16/22 10:33	CH	EET MID
Soluble	Analysis	300.0		5			34856	09/20/22 00:34	CH	EET MID

Client Sample ID: FS02A Lab Sample ID: 890-2977-2 Date Collected: 09/14/22 14:35 **Matrix: Solid** 

Date Received: 09/15/22 09:36

Batch Batch Dil Initial Final Batch Prepared Method **Prep Type** Type Run **Factor Amount** Amount Number or Analyzed **Analyst** Lab Total/NA 5035 34689 09/19/22 12:00 MNR EET MID Prep 4.97 g 5 mL Total/NA 8021B Analysis 5 mL 5 mL 34832 09/20/22 00:50 MNR EET MID 1 Total/NA Analysis Total BTEX 1 34920 09/20/22 09:49 AJ **EET MID** Total/NA 8015 NM Analysis 1 34865 09/19/22 15:34 SM **EET MID** Total/NA Prep 8015NM Prep 10.00 g 10 mL 34673 09/16/22 11:41 DM **EET MID** Total/NA 8015B NM Analysis 1 uL 1 uL 34714 09/18/22 19:28 SM **EET MID** Soluble DI Leach 5 g 50 mL 34662 09/16/22 10:33 CH **EET MID** Leach 300.0 Soluble Analysis 5 34856 09/20/22 00:39 CH **EET MID** 

**Laboratory References:** 

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

# **Accreditation/Certification Summary**

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-2977-1

SDG: Lea County NM

# **Laboratory: Eurofins Midland**

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

Authority	Pro	ogram	Identification Number	Expiration Date
Texas	NE	ELAP	T104704400-22-24	06-30-23
The following analyte	s are included in this rend	ort but the laboratory is r	not certified by the governing authority.	This list may include analytes for y
the agency does not	•	ore, but the laboratory is i	iot certified by the governing authority.	This list may include analytes for v
,	•	Matrix	Analyte	This list may include analytes for v
the agency does not	offer certification.	•		This list may include analytes for v

4

5

7

0

10

12

13

114

# **Method Summary**

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-2977-1

SDG: Lea County NM

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

FS02A

# **Sample Summary**

Client: Ensolum

890-2977-2

Project/Site: Zia Hills 19-1

Job ID: 890-2977-1 SDG: Lea County NM

Lab Sample ID Client Sample ID Matrix Collected Received Depth 890-2977-1 FS01A Solid 09/14/22 14:30 09/15/22 09:36 1 Solid

09/14/22 14:35 09/15/22 09:36 1

Relinquished by: (Signature)

Received by: (Signature)

9-15-22936

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Revised Date 08/25/2020 Rev. 2020.2

# Chain of Custody

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

			Midland, TX (4	432) 704-544(	), San Antonio,	Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334	Work	Work Order No:	l
	Xenco		EL Paso, TX	(915) 585-34	43, Lubbock, T	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296			
			Hobbs, NM	(575) 392-758	i0, Carlsbad, N	Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	WWW	www.xenco.com Page 1 of 1	ļ
Project Manager: J	Josh Adams	Bill to: (I	Bill to: (if different)	Josh Adams	ıs		_	Work Order Comments	
	Ensolum, LLC	Compar	Company Name:	Ensolum, LLC	LC		Program: UST/PST	Program: UST/PST [] PRP [] Brownfields [] RRC [] Superfund [	
	601 N Marienfeld St Suite 400	Address:		601 N Mar	601 N Marienfeld St Suite 400	te 400	State of Project:		
City, State ZIP: N	Midland, TX 79701	City, State ZIP:	ite ZIP:	Midland, TX 79701	X 79701		Reporting: Level II L	Reporting: Level II  Level III  PST/UST TRRP Level IV	L_
Phone: 8	817-683-2503	Email: jadams@ensolum.com, cshore@ensolum.com	@ensolum.c	com, cshore	@ensolum.	com	Deliverables: EDD	ADaPT Other:	<u></u>
Project Name:	Zia Hills 19-1	Turn Around				ANALYSIS R	EQUEST	Preservative Codes	
Project Number:	03D2024049	☐ Routine ☑ Rush	Pres.					None: NO DI Water: H <sub>2</sub> O	ŏ
Project Location:	Lea County, NM	Due Date: 3 Day	)ay					Cool: Cool MeOH: Me	
Sampler's Name:	Conner Shore	TAT starts the day received by	ived by						
PO#:	)	the lab, if received by 4:30pm	L					H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub> NaOH: Na	
SAMPLE RECEIPT	Temp Blank: Yes No	Wet ice: (Yes	S nete	.0)				H₃PO₄: HP	
Samples Received Intact:	act: (Ye) No Thermometer ID:	rID: TWMOO	Ш	300				NaHSO₄: NABIS	
Cooler Custody Seals:	Yes No /N/A Correction Factor:	actor:	P.	PA				Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ; NaSO <sub>3</sub>	
Sample Custody Seals:	Yes No (N/A) Temperature Reading:	Reading:   .	2	S (E		890-2977 Chain of	of Custody	Zn Acetate+NaOH: Zn	·
Total Containers:	Corrected Temperature:	imperature: 1 ' O	2		802	-		NaOH+Ascorbic Acid: SAPC	
Sample Identification	fication Matrix Sampled	Time Depth	Grab/ # of Comp Cont	CHLOR	BTEX (			Sample Comments	
FS01	S 09.14.22	1430 1'	G 1	×	×				
FS02	S 09.14.22	1435 1'	G 1	×	×				
								CHARGE CODE	<u> </u>
								A054207SM	<u></u>
		\							
									<u>l</u>
\ \	X								1_
2									$\perp$
12									1
1									L
Total 200.7 / 6010		BRCRA 13PPM Te	Texas 11 Al	Sb As Ba	Ba Be B Cd	Ca Cr Co Cu Fe Pb	Ph Mg Mn Mo Ni K Se Ag	Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn	
Circle Method(s) and	Circle Method(s) and Metal(s) to be analyzed	ICLF / SPLF 6010 BRCKA	O. OKCKA	OD AS D	be ca c	Sp As ba be calci to calro will wo Ni se Ag ii o	N SE AG II O	ng. 10317243.17747077471	JL
Notice: Signature of this do	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 security and control of security and security for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of security for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of security for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of security for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of security for any losses or expenses.	titutes a valid purchase o	rder from client	company to Eu	rofins Xenco, it	s affiliates and subcontractors.	It assigns standard terms an	nd conditions	
of Eurofins Xenco. A minim	of Eurofins Xenco. A minimum charge of \$8.00 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.	project and a charge of \$4	for each sampl	e submitted to	Eurofins Xenco	, but not analyzed. These terms	will be enforced unless previo	lously negotiated.	L

# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-2977-1

SDG Number: Lea County NM

List Source: Eurofins Carlsbad

Login Number: 2977 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	

Euronnis Carisbau

2

2

4

8

10

12

13

14

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2977-1 SDG Number: Lea County NM

> **List Source: Eurofins Midland** List Creation: 09/16/22 11:00 AM

Creator: Rodriguez, Leticia

Login Number: 2977

List Number: 2

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**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-3354-1

Laboratory Sample Delivery Group: Lea County

Client Project/Site: Zia Hills 19-1

Revision: 1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Josh Adams

KRAMER

Authorized for release by: 11/4/2022 4:30:09 PM

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
Released to Imaging: 6/21/2023 2:22:52 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 signature.

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

1

3

4

**5** 

7

10

12

13

Н

Client: Ensolum Laboratory Job ID: 890-3354-1 Project/Site: Zia Hills 19-1

SDG: Lea County

# **Table of Contents**

1
2
3
4
5
7
8
12
14
15
16
17
18
19

# **Definitions/Glossary**

Client: Ensolum Job ID: 890-3354-1 Project/Site: Zia Hills 19-1

SDG: Lea County

**Qualifiers** 

**GC VOA** Qualifier

F1 MS and/or MSD recovery exceeds control limits.

MS/MSD RPD exceeds control limits F2

**Qualifier Description** 

U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

F2 MS/MSD RPD exceeds control limits

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

HPLC/IC

Qualifier **Qualifier Description** 

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 Colony Forming Unit **CFU** Contains No Free Liquid CNF

**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)

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

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

Method Quantitation Limit NC Not Calculated

MQL

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 QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

**TNTC** Too Numerous To Count

### Case Narrative

Client: Ensolum
Project/Site: Zia Hills 19-1

Job ID: 890-3354-1 SDG: Lea County

Job ID: 890-3354-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3354-1

### **REVISION**

The report being provided is a revision of the original report sent on 11/4/2022. The report (revision 1) is being revised due to Per client email, revising project name..

Report revision history

### Receipt

The samples were received on 11/1/2022 2:30 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 23.0°C

### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS10 (890-3354-1) and SS10A (890-3354-2).

### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-38611 and analytical batch 880-38578 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 sample was outside control limits: SS10 (890-3354-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: The method blank for preparation batch 880-38587 and analytical batch 880-38572 contained Gasoline Range Organics (GRO)-C6-C10, Diesel Range Organics (Over C10-C28) and Oll Range Organics (Over C28-C36) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-38587 and analytical batch 880-38572 was outside control limits. Sample non-homogeneity is suspected.

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

### HPLC/IC

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

2

3

4

\_

9

10

12

13

14

Client: Ensolum Job ID: 890-3354-1 Project/Site: Zia Hills 19-1 SDG: Lea County

**Client Sample ID: SS10** Lab Sample ID: 890-3354-1

Date Collected: 11/01/22 11:30 **Matrix: Solid** Date Received: 11/01/22 14:30

Sample Depth: 2'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00199	U	0.00199	mg/Kg		11/03/22 10:41	11/04/22 03:00	
Toluene	< 0.00199	U	0.00199	mg/Kg		11/03/22 10:41	11/04/22 03:00	
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		11/03/22 10:41	11/04/22 03:00	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/03/22 10:41	11/04/22 03:00	
o-Xylene	< 0.00199	U	0.00199	mg/Kg		11/03/22 10:41	11/04/22 03:00	
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/03/22 10:41	11/04/22 03:00	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	100		70 - 130			11/03/22 10:41	11/04/22 03:00	
1,4-Difluorobenzene (Surr)	96		70 - 130			11/03/22 10:41	11/04/22 03:00	
Method: TAL SOP Total BTEX	C - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/04/22 14:55	
Method: SW846 8015 NM - Di	esel Range (	•	DRO) (GC)	Unit	n	Propared	Analyzod	Dil Ea
Method: SW846 8015 NM - Di		Organics (		0 0				
	esel Range (	Qualifier		Unit mg/Kg	<u>D</u>	Prepared	Analyzed 11/04/22 11:23	
Method: SW846 8015 NM - Di Analyte	esel Range (	Qualifier	DRO) (GC)	Unit mg/Kg	<u>D</u>	Prepared		
Method: SW846 8015 NM - Di Analyte	esel Range ( Result <50.0	Qualifier U	DRO) (GC) RL 50.0		<u>D</u>	Prepared		
Method: SW846 8015 NM - Di Analyte Total TPH	esel Range ( Result ( <50.0)	Qualifier U	DRO) (GC) RL 50.0		<u>D</u>	Prepared Prepared		
Method: SW846 8015 NM - Di Analyte Total TPH Method: SW846 8015B NM - E	esel Range ( Result ( <50.0)	Qualifier U Organics Qualifier	DRO) (GC) RL 50.0 (DRO) (GC)	mg/Kg			11/04/22 11:23	Dil Fa
Method: SW846 8015 NM - Di Analyte Total TPH  Method: SW846 8015B NM - I Analyte Gasoline Range Organics	esel Range ( Result <50.0  Ciesel Range ( Result	Qualifier U  Organics Qualifier U	DRO) (GC) RL 50.0 (DRO) (GC) RL	mg/Kg Unit		Prepared	11/04/22 11:23  Analyzed  11/04/22 02:41	Dil Fa
Method: SW846 8015 NM - Di Analyte Total TPH  Method: SW846 8015B NM - I Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	esel Range ( Result (	Qualifier U  Organics Qualifier U	DRO) (GC) RL 50.0 (DRO) (GC) RL 50.0	mg/Kg  Unit mg/Kg		Prepared 11/03/22 08:39 11/03/22 08:39	11/04/22 11:23  Analyzed  11/04/22 02:41	Dil Fa
Method: SW846 8015 NM - Di Analyte Total TPH  Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	esel Range ( Result (	Qualifier U  Organics Qualifier U  U	DRO) (GC) RL 50.0  (DRO) (GC) RL 50.0  50.0	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 11/03/22 08:39 11/03/22 08:39	11/04/22 11:23  Analyzed 11/04/22 02:41 11/04/22 02:41	Dil Fa
Method: SW846 8015 NM - Di Analyte Total TPH  Method: SW846 8015B NM - Di Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	esel Range ( Result   <50.0  Diesel Range ( Result   <50.0  <50.0  <50.0	Qualifier U  Organics Qualifier U  U	DRO) (GC) RL 50.0  (DRO) (GC) RL 50.0  50.0  50.0	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 11/03/22 08:39 11/03/22 08:39 11/03/22 08:39	11/04/22 11:23  Analyzed 11/04/22 02:41  11/04/22 02:41  11/04/22 02:41	Dil Fa
Method: SW846 8015 NM - Di Analyte Total TPH  Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	esel Range ( Result   <50.0  Diesel Range ( Result   <50.0   <50.0   <50.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <80.0   <	Qualifier U  Organics Qualifier U  U  Qualifier	DRO) (GC) RL 50.0  (DRO) (GC) RL 50.0  50.0  Limits	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 11/03/22 08:39 11/03/22 08:39 11/03/22 08:39 Prepared	11/04/22 11:23  Analyzed 11/04/22 02:41  11/04/22 02:41  11/04/22 02:41  Analyzed 11/04/22 02:41	Dil Fa
Method: SW846 8015 NM - Di Analyte Total TPH  Method: SW846 8015B NM - Di Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result   <50.0     Color	Qualifier U  Organics Qualifier U  U  U  Qualifier S1-	DRO) (GC) RL 50.0  (DRO) (GC) RL 50.0  50.0  50.0  Limits 70 - 130 70 - 130	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 11/03/22 08:39 11/03/22 08:39 11/03/22 08:39 Prepared 11/03/22 08:39	Analyzed 11/04/22 02:41 11/04/22 02:41 11/04/22 02:41 Analyzed 11/04/22 02:41	Dil Fa
Method: SW846 8015 NM - Di Analyte Total TPH  Method: SW846 8015B NM - Di Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	esel Range ( Result   <50.0  Diesel Range ( Result   <50.0  <50.0  <50.0  %Recovery   69   79   cons, Ion Chr	Qualifier U  Organics Qualifier U  U  U  Qualifier S1-	DRO) (GC) RL 50.0  (DRO) (GC) RL 50.0  50.0  50.0  Limits 70 - 130 70 - 130	mg/Kg  Unit mg/Kg  mg/Kg		Prepared 11/03/22 08:39 11/03/22 08:39 11/03/22 08:39 Prepared 11/03/22 08:39	Analyzed 11/04/22 02:41 11/04/22 02:41 11/04/22 02:41 Analyzed 11/04/22 02:41	Dil Fa

**Client Sample ID: SS10A** Lab Sample ID: 890-3354-2 Date Collected: 11/01/22 13:00 **Matrix: Solid** 

Date Received: 11/01/22 14:30

Sample Depth: 3'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/03/22 10:41	11/04/22 03:20	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/03/22 10:41	11/04/22 03:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/03/22 10:41	11/04/22 03:20	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		11/03/22 10:41	11/04/22 03:20	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/03/22 10:41	11/04/22 03:20	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/03/22 10:41	11/04/22 03:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130			11/03/22 10:41	11/04/22 03:20	1

# **Client Sample Results**

Client: Ensolum Job ID: 890-3354-1 Project/Site: Zia Hills 19-1 SDG: Lea County

**Client Sample ID: SS10A** 

Date Collected: 11/01/22 13:00 Date Received: 11/01/22 14:30

Sample Depth: 3'

Lab	Samp	le ID	: 890	-3354-2
-----	------	-------	-------	---------

**Matrix: Solid** 

Method: SW846 8021B -	Volatile Organic Compou	inds (GC) (Continued)
-----------------------	-------------------------	-----------------------

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	104		70 - 130	11/03/22 10:41	11/04/22 03:20	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			11/04/22 14:55	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/04/22 11:23	1

			. (= ) ( )					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/03/22 08:39	11/04/22 03:03	1
Diesel Range Organics (Ov C10-C28)	ver <49.9	U	49.9	mg/Kg		11/03/22 08:39	11/04/22 03:03	1
Oll Range Organics (Over 0	C28-C36) <49.9	U	49.9	mg/Kg		11/03/22 08:39	11/04/22 03:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	80		70 - 130	11/03/22 08:39	11/04/22 03:03	1
o-Terphenyl	91		70 - 130	11/03/22 08:39	11/04/22 03:03	1

Method: MCAWW 300.0	<ul> <li>Anions, Ion Chromatography - S</li> </ul>	oluble
A a lt.a	Desuit Ouslities	DI.

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	75.2	5.04	mg/Kg			11/04/22 09:57	1

# **Surrogate Summary**

Client: Ensolum Job ID: 890-3354-1 Project/Site: Zia Hills 19-1 SDG: Lea County

Method: 8021B - Volatile Organic Compounds (GC)

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

			Perce	nt Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-21089-A-41-D MS	Matrix Spike	119	95	
880-21089-A-41-E MSD	Matrix Spike Duplicate	92	96	
890-3354-1	SS10	100	96	
890-3354-2	SS10A	126	104	
LCS 880-38611/1-A	Lab Control Sample	114	102	
LCSD 880-38611/2-A	Lab Control Sample Dup	111	103	
MB 880-38429/5-A	Method Blank	90	97	
MB 880-38611/5-A	Method Blank	89	96	

DFBZ = 1,4-Difluorobenzene (Surr)

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

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

			Perce	nt Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-21018-A-1-D MS	Matrix Spike	80	82	
880-21018-A-1-E MSD	Matrix Spike Duplicate	80	78	
890-3354-1	SS10	69 S1-	79	
390-3354-2	SS10A	80	91	
_CS 880-38587/2-A	Lab Control Sample	82	96	
LCSD 880-38587/3-A	Lab Control Sample Dup	81	92	
MB 880-38587/1-A	Method Blank	88	105	

Surrogate Legend

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Job ID: 890-3354-1 Client: Ensolum Project/Site: Zia Hills 19-1 SDG: Lea County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38429/5-A

Lab Sample ID: MB 880-38611/5-A

**Matrix: Solid** 

**Analysis Batch: 38578** 

**Client Sample ID: Method Blank** 

**Prep Type: Total/NA** 

Prep Batch: 38429

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/01/22 16:03	11/03/22 13:54	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/01/22 16:03	11/03/22 13:54	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/01/22 16:03	11/03/22 13:54	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/01/22 16:03	11/03/22 13:54	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/01/22 16:03	11/03/22 13:54	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/01/22 16:03	11/03/22 13:54	1

MB MB

Surrogate	%Recovery Qualif	ier Limits	Prepared	Analyzed
4-Bromofluorobenzene (Surr)	90	70 - 130	11/01/22 16:03	11/03/22 13:54
1,4-Difluorobenzene (Surr)	97	70 - 130	11/01/22 16:03	11/03/22 13:54

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

Prep Batch: 38611

Matrix: Solid **Analysis Batch: 38578** 

	MB I	MR						
Analyte	Result (	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/03/22 10:41	11/04/22 01:30	1
Toluene	<0.00200 U	U	0.00200	mg/Kg		11/03/22 10:41	11/04/22 01:30	1
Ethylbenzene	<0.00200 U	U	0.00200	mg/Kg		11/03/22 10:41	11/04/22 01:30	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/03/22 10:41	11/04/22 01:30	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/03/22 10:41	11/04/22 01:30	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/03/22 10:41	11/04/22 01:30	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	11/03/22 10:41	11/04/22 01:30	1
1,4-Difluorobenzene (Surr)	96		70 - 130	11/03/22 10:41	11/04/22 01:30	1

Lab Sample ID: LCS 880-38611/1-A

**Matrix: Solid** 

**Analysis Batch: 38578** 

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

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

Prep Batch: 38611

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1057		mg/Kg		106	70 - 130	
Toluene	0.100	0.1157		mg/Kg		116	70 - 130	
Ethylbenzene	0.100	0.1103		mg/Kg		110	70 - 130	
m-Xylene & p-Xylene	0.200	0.1961		mg/Kg		98	70 - 130	
o-Xylene	0.100	0.09888		mg/Kg		99	70 - 130	

LCS LCS

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

Lab Sample ID: LCSD 880-38611/2-A

Matrix: Solid

Analysis	Batch:	38578
•		

Benzene

- many 0		
Analyte		

						Prep ly	pe: lot	ai/NA
						Prep I	Batch: 3	38611
Spike	LCSD	LCSD				%Rec		RPD
Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
0.100	0.1059	-	mg/Kg		106	70 - 130	0	35

**Eurofins Carlsbad** 

Dil Fac

Client: Ensolum Job ID: 890-3354-1 Project/Site: Zia Hills 19-1 SDG: Lea County

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

Lab Sample ID: LCSD 880-38611/2-A

**Matrix: Solid** 

**Analysis Batch: 38578** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 38611

LCSD LCSD Spike %Rec **RPD** Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Toluene 0.100 0.1121 mg/Kg 112 70 - 130 3 35 0.100 Ethylbenzene 0.1065 mg/Kg 107 70 - 1304 35 0.200 0.1898 mg/Kg 95 70 - 130 35 m-Xylene & p-Xylene 3 0.100 35 o-Xylene 0.09559 mg/Kg 96 70 - 130 3

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 880-21089-A-41-D MS **Client Sample ID: Matrix Spike** 

**Analysis Batch: 38578** 

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

Prep Batch: 38611

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier D %Rec Limits Unit Benzene <0.00200 U F2 F1 0.0998 0.09170 92 70 - 130 mg/Kg Toluene <0.00200 U F2 F1 0.0998 0.1044 mg/Kg 105 70 - 130 Ethylbenzene <0.00200 U F2 F1 0.0998 0.1034 mg/Kg 104 70 - 130 m-Xylene & p-Xylene <0.00401 U F2 F1 0.200 92 0.1837 mg/Kg 70 - 130 o-Xylene <0.00200 U F2 F1 0.0998 0.09360 mg/Kg 93 70 - 130

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	119	70 - 130
1,4-Difluorobenzene (Surr)	95	70 - 130

Lab Sample ID: 880-21089-A-41-E MSD

Matrix: Solid

**Analysis Batch: 38578** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 38611

7 many one Datem Cook											,
_	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00200	U F2 F1	0.0990	0.03180	F2 F1	mg/Kg		32	70 - 130	97	35
Toluene	<0.00200	U F2 F1	0.0990	0.04125	F2 F1	mg/Kg		42	70 - 130	87	35
Ethylbenzene	<0.00200	U F2 F1	0.0990	0.04274	F2 F1	mg/Kg		43	70 - 130	83	35
m-Xylene & p-Xylene	<0.00401	U F2 F1	0.198	0.07074	F2 F1	mg/Kg		36	70 - 130	89	35
o-Xylene	<0.00200	U F2 F1	0.0990	0.03713	F2 F1	mg/Kg		37	70 - 130	86	35

MSD MSD

Surrogate	%Recovery	Quaimer	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

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

Lab Sample ID: MB 880-38587/1-A

**Matrix: Solid** 

**Analysis Batch: 38572** 

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

Prep Batch: 38587

MB MB Result Qualifier RL Unit Analyte Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 mg/Kg 11/03/22 08:39 11/03/22 22:42

(GRO)-C6-C10

Client: Ensolum Job ID: 890-3354-1
Project/Site: Zia Hills 19-1 SDG: Lea County

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

Lab Sample ID: MB 880-38587/1-A

Matrix: Solid

Analysis Batch: 38572

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38587

							•	
	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		11/03/22 08:39	11/03/22 22:42	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/03/22 08:39	11/03/22 22:42	1
	МВ	МВ						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130			11/03/22 08:39	11/03/22 22:42	1
o-Terphenyl	105		70 - 130			11/03/22 08:39	11/03/22 22:42	1

Lab Sample ID: LCS 880- Matrix: Solid Analysis Batch: 38572	38587/2-A					Clier	nt Sai	mple ID	: Lab Control Sample Prep Type: Total/NA Prep Batch: 38587
			Spike	_	LCS				%Rec
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10			1000	1017		mg/Kg		102	70 - 130
Diesel Range Organics (Over			1000	946.9		mg/Kg		95	70 - 130
C10-C28)									
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	82		70 - 130						
o-Terphenyl	96		70 - 130						

Client Sample ID:						Lab Control Sample Dup Prep Type: Total/NA Prep Batch: 38587			
Spike	LCSD	LCSD				%Rec		RPD	
Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
1000	1113		mg/Kg		111	70 - 130	9	20	
1000	1149		mg/Kg		115	70 - 130	19	20	
	Added	Added Result 1000 1113	Spike LCSD LCSD Added Result Qualifier 1000 1113	Spike LCSD LCSD Added Result Qualifier Unit mg/Kg	Spike LCSD LCSD Added Result Qualifier Unit D mg/Kg	Spike         LCSD         LCSD           Added         Result         Qualifier         Unit         D         %Rec           1000         1113         mg/Kg         111	Spike   LCSD   LCSD   WRec	Prep Type: Tot   Prep Batch: 3	

	LCSD		
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	92		70 - 130

Lab Sample ID: 880-2101 Matrix: Solid Analysis Batch: 38572	8-A-1-D MS						C	lient Sa	mple ID: Matrix Spike Prep Type: Total/NA Prep Batch: 38587
	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	997	1234		mg/Kg		122	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	997	975.4		mg/Kg		98	70 - 130
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	80		70 - 130						
o-Terphenyl	82		70 - 130						

Client: Ensolum Job ID: 890-3354-1 Project/Site: Zia Hills 19-1 SDG: Lea County

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

Lab Sample ID: 880-21018-A-1-E MSD **Client Sample ID: Matrix Spike Duplicate** 

**Matrix: Solid** 

**Analysis Batch: 38572** 

**Prep Type: Total/NA** 

Prep Batch: 38587

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	<50.0	U F2	999	867.6	F2	mg/Kg		85	70 - 130	35	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<50.0	U	999	954.1		mg/Kg		96	70 - 130	2	20

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	80		70 - 130
o-Terphenyl	78		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38519/1-A **Client Sample ID: Method Blank Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 38700** 

MB MB

Analyte	Result Q	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	J	5.00	mg/Kg			11/04/22 08:33	1

Lab Sample ID: LCS 880-38519/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble Matrix: Solid** 

**Analysis Batch: 38700** 

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	254.7	,	mg/Kg		102	90 - 110	 

Lab Sample ID: LCSD 880-38519/3-A **Client Sample ID: Lab Control Sample Dup Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 38700** 

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	254 1		ma/Ka		102	90 - 110		20

Lab Sample ID: 890-3354-2 MS Client Sample ID: SS10A **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 38700** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	75.2		252	327 0		ma/Ka		100	90 - 110	 

Lab Sample ID: 890-3354-2 MSD Client Sample ID: SS10A

**Matrix: Solid** 

Analysis Batch: 38700

Allalysis Datcil. 30700											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	75.2		252	326.8		mg/Kg		100	90 - 110	0	20

**Eurofins Carlsbad** 

**Prep Type: Soluble** 

Client: Ensolum Project/Site: Zia Hills 19-1

Job ID: 890-3354-1 SDG: Lea County

**GC VOA** 

Prep Batch: 38429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38429/5-A	Method Blank	Total/NA	Solid	5035	

#### **Analysis Batch: 38578**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3354-1	SS10	Total/NA	Solid	8021B	38611
890-3354-2	SS10A	Total/NA	Solid	8021B	38611
MB 880-38429/5-A	Method Blank	Total/NA	Solid	8021B	38429
MB 880-38611/5-A	Method Blank	Total/NA	Solid	8021B	38611
LCS 880-38611/1-A	Lab Control Sample	Total/NA	Solid	8021B	38611
LCSD 880-38611/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38611
880-21089-A-41-D MS	Matrix Spike	Total/NA	Solid	8021B	38611
880-21089-A-41-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38611

#### Prep Batch: 38611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3354-1	SS10	Total/NA	Solid	5035	
890-3354-2	SS10A	Total/NA	Solid	5035	
MB 880-38611/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38611/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38611/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-21089-A-41-D MS	Matrix Spike	Total/NA	Solid	5035	
880-21089-A-41-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

# **Analysis Batch: 38746**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3354-1	SS10	Total/NA	Solid	Total BTEX	
890-3354-2	SS10A	Total/NA	Solid	Total BTEX	

# **GC Semi VOA**

# **Analysis Batch: 38572**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3354-1	SS10	Total/NA	Solid	8015B NM	38587
890-3354-2	SS10A	Total/NA	Solid	8015B NM	38587
MB 880-38587/1-A	Method Blank	Total/NA	Solid	8015B NM	38587
LCS 880-38587/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38587
LCSD 880-38587/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38587
880-21018-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	38587
880-21018-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38587

# Prep Batch: 38587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3354-1	SS10	Total/NA	Solid	8015NM Prep	
890-3354-2	SS10A	Total/NA	Solid	8015NM Prep	
MB 880-38587/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38587/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38587/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-21018-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-21018-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Client: Ensolum Project/Site: Zia Hills 19-1

Job ID: 890-3354-1 SDG: Lea County

# **GC Semi VOA**

# **Analysis Batch: 38732**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3354-1	SS10	Total/NA	Solid	8015 NM	
890-3354-2	SS10A	Total/NA	Solid	8015 NM	

# HPLC/IC

#### Leach Batch: 38519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3354-1	SS10	Soluble	Solid	DI Leach	
890-3354-2	SS10A	Soluble	Solid	DI Leach	
MB 880-38519/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38519/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38519/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3354-2 MS	SS10A	Soluble	Solid	DI Leach	
890-3354-2 MSD	SS10A	Soluble	Solid	DI Leach	

# **Analysis Batch: 38700**

Released to Imaging: 6/21/2023 2:22:52 PM

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3354-1	SS10	Soluble	Solid	300.0	38519
890-3354-2	SS10A	Soluble	Solid	300.0	38519
MB 880-38519/1-A	Method Blank	Soluble	Solid	300.0	38519
LCS 880-38519/2-A	Lab Control Sample	Soluble	Solid	300.0	38519
LCSD 880-38519/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38519
890-3354-2 MS	SS10A	Soluble	Solid	300.0	38519
890-3354-2 MSD	SS10A	Soluble	Solid	300.0	38519

**Eurofins Carlsbad** 

Job ID: 890-3354-1

Client: Ensolum Project/Site: Zia Hills 19-1 SDG: Lea County

**Client Sample ID: SS10** Lab Sample ID: 890-3354-1

Date Collected: 11/01/22 11:30 **Matrix: Solid** Date Received: 11/01/22 14:30

	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	38611	11/03/22 10:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38578	11/04/22 03:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38746	11/04/22 14:55	SM	EET MID
Total/NA	Analysis	8015 NM		1			38732	11/04/22 11:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38587	11/03/22 08:39	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38572	11/04/22 02:41	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	38519	11/02/22 14:35	CH	EET MID
Soluble	Analysis	300.0		5			38700	11/04/22 09:52	CH	EET MID

**Client Sample ID: SS10A** Lab Sample ID: 890-3354-2 Date Collected: 11/01/22 13:00 **Matrix: Solid** 

Date Received: 11/01/22 14:30

	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	38611	11/03/22 10:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38578	11/04/22 03:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38746	11/04/22 14:55	SM	EET MID
Total/NA	Analysis	8015 NM		1			38732	11/04/22 11:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	38587	11/03/22 08:39	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38572	11/04/22 03:03	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	38519	11/02/22 14:35	CH	EET MID
Soluble	Analysis	300.0		1			38700	11/04/22 09:57	CH	EET MID

**Laboratory References:** 

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

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-3354-1
Project/Site: Zia Hills 19-1 SDG: Lea County

# **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	NELAP T104704400-22-24		06-30-23
The following applyto	s are included in this ren	ort but the laboratory is r	and portified by the governing outhority	This list may include analytes for y
,		ort, but the laboratory is i	not certified by the governing authority.	This list may include analytes for v
the agency does not		ort, but the laboratory is i	iot certilled by the governing authority.	This list may include analytes for v
• •		Matrix	Analyte	This list may include analytes for v
the agency does not o	offer certification.	•	, , ,	This list may include analytes for v

4

5

\_\_\_\_

8

10

11

13

14

# **Method Summary**

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-3354-1

SDG: Lea County

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
800.0	Anions, Ion Chromatography	MCAWW	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
3015NM Prep	Microextraction	SW846	EET MID
Ol 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** 

1

3

4

6

1 N

11

13

14

# **Sample Summary**

Client: Ensolum

Project/Site: Zia Hills 19-1

Job ID: 890-3354-1

SDG: Lea County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3354-1	SS10	Solid	11/01/22 11:30	11/01/22 14:30	2'
890-3354-2	SS10A	Solid	11/01/22 13:00	11/01/22 14:30	3'

Circle Method(s) and

Total 200.7 / 6010

ice: Signature of this document ervice. Eurofins Xenco will be li

ins Xenco. A minimum cha

Relinquished by: (Sig

13 14

eurofins Xenco **Environment Testing** 

Project Manager:

Bill to: (if different)

Company Name:

# 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

Date/Time									
	Received by: (Signature)	Relinquished by: (Signature)	Date/Time		1	Received by: (Signature)	Received t		(Signature)
	ditions ontrol y negotiated.	unent 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 ill 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 m charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated	is Xenco, its affiliates and si s incurred by the client if si ofins Xenco, but not analyz	ny to Eurofit s or expense nitted to Eur	er from client compainsibility for any losses or each sample subm	valid purchase orde assume any respor ind a charge of \$5 fo	ples constitutes an nples and shall not d to each project a	quishment of sam for the cost of san .00 will be applied	nt and reline liable only t harge of \$85
Sn U V Zn 470 / 7471	Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Lu Pb Mn Mo Ni Se Ag Tl U Hg:1631/245.1/7470/7471	4 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo I TCLP/SPLP6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	Al Sb As Ba Be B Cd o	Al Sb CRA Sb	13PPM Texas 11 CLP / SPLP 6010 : 8R	8RCRA 13PPI TCLP/SP		0 200.8 / 6020: and Metal(s) to be analyzed	200 d Metal
465-42015M				-	3H G	1300	14	8	
16	7		1		244	dill	-	2	
Sample Comments			CH B:	/ # of	Depth Comp	Time Sampled	Date	Matrix	fication
NaOH+Ascorbic Acid: SAPC			11	10	23.	Corrected Temperature:	Corrected T	,	
Zn Acetate+NaOH: Zn		890-3354 Chain of Custody	<u> </u>	יעו	230	e Reading:	Temperature Reading:	No NA	Yes
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	Na			Par	1	actor:	Correction Factor:	No.	Yes
H <sub>3</sub> PO <sub>4</sub> : HP	H <sub>3</sub>			amete	(Nes) No	Wet Ice:	Thermometer ID:	Temp Blank:	7 7
H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na	H <sub>2</sub>			rs	the lab, if received by 4:30pm	the lab, if rece			1
HCL: HC HNO 3: HN	HC				TAT starts the day received by	TAT starts the			C
Cool: Cool MeOH: Me	Co					Due Date:	444	or 400	3D 5
None: NO DI Water: H <sub>2</sub> O	No			Pres.	Rush	Routine	ク	rard	ea ?
Preservative Codes		ANALYSIS REQUEST			Turn Around	Tun		1-11514-	75. 4
Other:	Deliverables: EDD ADaPT	Deliv				Email:	8437	5-11-8	Ch.
/UST   TRRP   Level IV	Reporting: Level III Level III PST/UST TRRP	Repo			City, State ZIP:	220	1W 88	5	de
	State of Project:	State			Address:	2	ral Van	Natio	12
fields RRC Superfund	ram: UST/PST PRP Brownfields RRC	Program:		ė.	Company Name:			WAY.	30 y

SAMPLE RECEIPT

Cooler Custody Seals:

ample Custody Seals:

samples Received Intact:

Total Containers:

Sample Identificat

Sampler's Name:

roject Location:

Project Number:

Project Name:

City, State ZIP:

\ddress:

Work Order No:

www.xenco.com

Page

9

Work Order Comments

Revised Date 08/25/2020 Rev. 2020 2

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3354-1 SDG Number: Lea County

Login Number: 3354 **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.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Released to Imaging: 6/21/2023 2:22:52 PM

# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3354-1

SDG Number: Lea County

List Source: Eurofins Midland
List Number: 2
List Creation: 11/03/22 10:17 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	

1

3

5

4

7

a

11

12

14

<6mm (1/4").

# **Environment Testing America**

# **ANALYTICAL REPORT**

**Eurofins Midland** 1211 W. Florida Ave Midland, TX 79701 Tel: (432)704-5440

Laboratory Job ID: 880-17190-1

Laboratory Sample Delivery Group: Lea County, NM

Client Project/Site: Zia Hills 19-2

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

RAMER

8/1/2022 9:58:31 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: 6/21/2023 2:22:52 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: Zia Hills 19-2
Laboratory Job ID: 880-17190-1
SDG: Lea County,NM

# **Table of Contents**

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Client Sample Results	6
Surrogate Summary	11
QC Sample Results	13
QC Association Summary	19
Lab Chronicle	22
Certification Summary	24
Method Summary	25
Sample Summary	26
Chain of Custody	27
Receint Checklists	28

3

4

6

8

10

1 2

13

14

# **Definitions/Glossary**

Job ID: 880-17190-1 Client: Ensolum Project/Site: Zia Hills 19-2 SDG: Lea County, NM

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

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

**GC Semi VOA** 

Qualifier **Qualifier Description** 

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**Glossary** 

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

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

CFL Contains Free Liquid CFU Colony Forming Unit **CNF** Contains No Free Liquid

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

Project/Site: Zia Hills 19-2

Job ID: 880-17190-1

SDG: Lea County, NM

Job ID: 880-17190-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-17190-1

#### Receipt

The samples were received on 7/21/2022 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-30562 and analytical batch 880-30657 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: FS02 (880-17190-2). 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 880-30294 and analytical batch 880-30749 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 samples were outside control limits: FS03 (880-17190-3), FS04 (880-17190-4), FS05 (880-17190-5) and FS06 (880-17190-6). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### GC Semi VOA

Method 8015MOD NM: Surrogate recovery for the following samples were outside control limits: (890-2603-A-1-F), (890-2603-A-1-G MS) and (890-2603-A-1-H MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: FS03 (880-17190-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: FS05 (880-17190-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD NM: The method blank for preparation batch 880-30624 and analytical batch 880-30643 contained Gasoline Range Organics (GRO)-C6-C10, Diesel Range Organics (Over C10-C28) and OII Range Organics (Over C28-C36) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-30624 and analytical batch 880-30643 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### HPLC/IC

Method 300 ORGFM 28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30247 and analytical batch 880-30493 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

# **Case Narrative**

Client: Ensolum Job ID: 880-17190-1 Project/Site: Zia Hills 19-2 SDG: Lea County,NM

Job ID: 880-17190-1 (Continued)

**Laboratory: Eurofins Midland (Continued)** 

Lab Sample ID: 880-17190-1

Client: Ensolum Job ID: 880-17190-1 Project/Site: Zia Hills 19-2 SDG: Lea County,NM

**Client Sample ID: FS01** 

Date Collected: 07/14/22 11:15 Date Received: 07/21/22 08:00

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.200	U	0.200	mg/Kg		07/25/22 10:57	07/27/22 06:31	100
Toluene	<0.200	U	0.200	mg/Kg		07/25/22 10:57	07/27/22 06:31	100
Ethylbenzene	0.261		0.200	mg/Kg		07/25/22 10:57	07/27/22 06:31	100
m-Xylene & p-Xylene	0.588		0.400	mg/Kg		07/25/22 10:57	07/27/22 06:31	100
o-Xylene	<0.200	U	0.200	mg/Kg		07/25/22 10:57	07/27/22 06:31	100
Xylenes, Total	0.588		0.400	mg/Kg		07/25/22 10:57	07/27/22 06:31	100
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	119		70 - 130			07/25/22 10:57	07/27/22 06:31	100
1,4-Difluorobenzene (Surr)	88		70 - 130			07/25/22 10:57	07/27/22 06:31	100
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.849		0.400	mg/Kg			07/27/22 09:48	•
Method: 8015 NM - Diesel Rang	e Organics (DR	O) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	4200		49.9	mg/Kg			07/27/22 10:58	
Method: 8015B NM - Diesel Rar					_			
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	78.6		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:01	•
Diesel Range Organics (Over C10-C28)	3790		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:01	,
Oll Range Organics (Over	336		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:01	
C28-C36)								
Total TPH	4200		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:01	•
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	78		70 - 130			07/25/22 16:28	07/26/22 13:01	
o-Terphenyl	81		70 - 130			07/25/22 16:28	07/26/22 13:01	
Madhada 000 0 Autana Ilau Ob		Solublo						
Method: 300.0 - Anions, ion Ch	romatograpny -	Soluble						
Method: 300.0 - Anions, Ion Ch Analyte	0	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa

**Client Sample ID: FS02** 

Date Collected: 07/14/22 11:30 Date Received: 07/21/22 08:00

Sample Depth: 0.5

Method: 8021B - Volatile Org	anic Compounds (	(GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0399	U	0.0399	mg/Kg		07/21/22 15:51	07/27/22 17:21	20
Toluene	<0.0399	U	0.0399	mg/Kg		07/21/22 15:51	07/27/22 17:21	20
Ethylbenzene	<0.0399	U	0.0399	mg/Kg		07/21/22 15:51	07/27/22 17:21	20
m-Xylene & p-Xylene	0.758		0.0798	mg/Kg		07/21/22 15:51	07/27/22 17:21	20
o-Xylene	0.251		0.0399	mg/Kg		07/21/22 15:51	07/27/22 17:21	20
Xylenes, Total	1.01		0.0798	mg/Kg		07/21/22 15:51	07/27/22 17:21	20

**Eurofins Midland** 

**Matrix: Solid** 

Lab Sample ID: 880-17190-2

Client: Ensolum Project/Site: Zia Hills 19-2

Job ID: 880-17190-1 SDG: Lea County,NM

**Client Sample ID: FS02** Lab Sample ID: 880-17190-2

Date Collected: 07/14/22 11:30 Matrix: Solid Date Received: 07/21/22 08:00

Sample Depth: 0.5

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	146	S1+	70 - 130			07/21/22 15:51	07/27/22 17:21	20
1,4-Difluorobenzene (Surr)	92		70 - 130			07/21/22 15:51	07/27/22 17:21	20
Method: Total BTEX - Total BTE	EX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	1.01		0.0798	mg/Kg			07/27/22 09:48	1
Method: 8015 NM - Diesel Rang	ge Organics (DR	O) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	3050		49.9	mg/Kg			07/27/22 10:58	1
Method: 8015B NM - Diesel Rai	nge Organics (Di	RO) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/25/22 16:28	07/26/22 13:22	1
Diesel Range Organics (Over C10-C28)	2750		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:22	
Oll Range Organics (Over C28-C36)	298		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:22	,
Total TPH	3050		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:22	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	76		70 - 130			07/25/22 16:28	07/26/22 13:22	1
o-Terphenyl	79		70 - 130			07/25/22 16:28	07/26/22 13:22	1
Method: 300.0 - Anions, Ion Ch	romatography -	Soluble						
Analyte	• • • •	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

50.0 **Client Sample ID: FS03** Lab Sample ID: 880-17190-3

919

mg/Kg

Date Collected: 07/18/22 10:00 Date Received: 07/21/22 08:00

Sample Depth: 0.5

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0994	U	0.0994	mg/Kg		07/29/22 12:56	07/31/22 18:50	50
Toluene	0.476		0.0994	mg/Kg		07/29/22 12:56	07/31/22 18:50	50
Ethylbenzene	2.15		0.0994	mg/Kg		07/29/22 12:56	07/31/22 18:50	50
m-Xylene & p-Xylene	9.38		0.199	mg/Kg		07/29/22 12:56	07/31/22 18:50	50
o-Xylene	2.46		0.0994	mg/Kg		07/29/22 12:56	07/31/22 18:50	50
Xylenes, Total	11.8		0.199	mg/Kg		07/29/22 12:56	07/31/22 18:50	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	239	S1+	70 - 130			07/29/22 12:56	07/31/22 18:50	50
1,4-Difluorobenzene (Surr)	87		70 - 130			07/29/22 12:56	07/31/22 18:50	50
- Method: Total BTEX - Total BT	EX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	14.5		0.199	mg/Kg			07/27/22 09:48	1

**Eurofins Midland** 

**Matrix: Solid** 

07/26/22 05:06

Lab Sample ID: 880-17190-3

07/25/22 16:28 07/26/22 13:44

Job ID: 880-17190-1 SDG: Lea County,NM

Client: Ensolum Project/Site: Zia Hills 19-2

Date Collected: 07/18/22 10:00 Date Received: 07/21/22 08:00

**Client Sample ID: FS03** 

Sample Depth: 0.5

	Method: 8015 NM - Diesel Range C	Organics (DRO) (GC)						
	Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Total TPH	6340	49.9	mg/Kg			07/27/22 10:58	1
_								
ı	Method: 8015B NM - Diesel Range	Organics (DRO) (GC)						
	Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Method: 8015B NM - Diesel Ra	nge Organics (DI	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	407		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:44	1
Diesel Range Organics (Over C10-C28)	5440		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:44	1
Oll Range Organics (Over C28-C36)	490		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:44	1
Total TPH	6340		49.9	mg/Kg		07/25/22 16:28	07/26/22 13:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130			07/25/22 16:28	07/26/22 13:44	1

Method: 300.0 - Anions, Ion Chron	natography - Soluble						
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	344	4.96	mg/Kg			07/26/22 11:15	1

70 - 130

113

**Client Sample ID: FS04** Lab Sample ID: 880-17190-4 **Matrix: Solid** Date Collected: 07/18/22 10:25

Date Received: 07/21/22 08:00

o-Terphenyl

Method: 8021B - Volatile Organi	•	•	DI	11-:4	_	Bd	A	Dil Fa
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	
Benzene		U	0.0996	mg/Kg		07/29/22 12:56	07/31/22 19:10	50
Toluene	0.779		0.0996	mg/Kg		07/29/22 12:56	07/31/22 19:10	50
Ethylbenzene	4.09		0.0996	mg/Kg		07/29/22 12:56	07/31/22 19:10	50
m-Xylene & p-Xylene	17.5		0.199	mg/Kg		07/29/22 12:56	07/31/22 19:10	50
o-Xylene	4.19		0.0996	mg/Kg		07/29/22 12:56	07/31/22 19:10	50
Xylenes, Total	21.7		0.199	mg/Kg		07/29/22 12:56	07/31/22 19:10	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	68	S1-	70 - 130			07/29/22 12:56	07/31/22 19:10	50
4 4 10 10 10 10	87		70 400			07/29/22 12:56	07/31/22 19:10	50
1,4-Difluorobenzene (Surr)	87		70 - 130			01/29/22 12.50	01/31/22 19.10	00
· · · · · · · · · · · · · · · · · · ·			70 - 130			01/29/22 12.30	01/31/22 13.10	00
Method: Total BTEX - Total BTE	X Calculation	Qualifier	70 - 130 RL	Unit	D	Prepared	Analyzed	
Method: Total BTEX - Total BTE Analyte Total BTEX	X Calculation	Qualifier		Unit mg/Kg	<u>D</u>			Dil Fac
Method: Total BTEX - Total BTE Analyte Total BTEX	EX Calculation Result 26.6		RL		<u>D</u>		Analyzed	
Method: Total BTEX - Total BTE Analyte Total BTEX  Method: 8015 NM - Diesel Rang	EX Calculation Result 26.6 e Organics (DR		RL		<u>D</u>		Analyzed	Dil Fac
Method: Total BTEX - Total BTE Analyte Total BTEX  Method: 8015 NM - Diesel Rang Analyte	EX Calculation Result 26.6 e Organics (DR	O) (GC)	<b>RL</b> 0.199	mg/Kg		Prepared	Analyzed 07/27/22 09:48	Dil Fac
Method: Total BTEX - Total BTE Analyte	EX Calculation Result 26.6 e Organics (DRO Result 3780	O) (GC) Qualifier		mg/Kg		Prepared	Analyzed 07/27/22 09:48 Analyzed	Dil Fac
Method: Total BTEX - Total BTE Analyte Total BTEX  Method: 8015 NM - Diesel Rang Analyte Total TPH  Method: 8015B NM - Diesel Rang	EX Calculation Result 26.6 e Organics (DRO Result 3780 age Organics (D	O) (GC) Qualifier		mg/Kg		Prepared	Analyzed 07/27/22 09:48 Analyzed	Dil Fac
Method: Total BTEX - Total BTE Analyte Total BTEX  Method: 8015 NM - Diesel Rang Analyte Total TPH	EX Calculation Result 26.6 e Organics (DRO Result 3780 age Organics (D	O) (GC) Qualifier  RO) (GC)	RL 0.199 RL 49.9	mg/Kg  Unit  mg/Kg	<u>D</u>	Prepared Prepared	Analyzed 07/27/22 09:48  Analyzed 07/27/22 10:58	

Lab Sample ID: 880-17190-4

# **Client Sample Results**

Client: Ensolum Job ID: 880-17190-1 Project/Site: Zia Hills 19-2 SDG: Lea County,NM

**Client Sample ID: FS04** 

Date Collected: 07/18/22 10:25 Date Received: 07/21/22 08:00

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over	259		49.9	mg/Kg		07/25/22 16:28	07/26/22 14:06	1
C28-C36)								
Total TPH	3780		49.9	mg/Kg		07/25/22 16:28	07/26/22 14:06	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	117		70 - 130			07/25/22 16:28	07/26/22 14:06	1
o-Terphenyl	87		70 - 130			07/25/22 16:28	07/26/22 14:06	1
Method: 300.0 - Anions, Ion C	Chromatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.3		4.99	mg/Kg			07/26/22 05:38	1

**Client Sample ID: FS05** Lab Sample ID: 880-17190-5 Date Collected: 07/18/22 14:00 Matrix: Solid

Date Received: 07/21/22 08:00

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.100	U	0.100	mg/Kg		07/29/22 12:56	07/31/22 19:31	5
Toluene	0.451		0.100	mg/Kg		07/29/22 12:56	07/31/22 19:31	50
Ethylbenzene	2.96		0.100	mg/Kg		07/29/22 12:56	07/31/22 19:31	50
m-Xylene & p-Xylene	13.0		0.200	mg/Kg		07/29/22 12:56	07/31/22 19:31	50
o-Xylene	3.52		0.100	mg/Kg		07/29/22 12:56	07/31/22 19:31	50
Xylenes, Total	16.5		0.200	mg/Kg		07/29/22 12:56	07/31/22 19:31	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	279	S1+	70 - 130			07/29/22 12:56	07/31/22 19:31	50
1,4-Difluorobenzene (Surr)	87		70 - 130			07/29/22 12:56	07/31/22 19:31	50
Method: Total BTEX - Total BTE	EX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	19.9		0.200	mg/Kg			07/27/22 09:48	1
Method: 8015 NM - Diesel Rang	ge Organics (DR	O) (GC)						
Method: 8015 NM - Diesel Ranç Analyte	•	O) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
_	•		RL	Unit mg/Kg	<u>D</u>	Prepared	<b>Analyzed</b> 07/27/22 10:58	Dil Fac
Analyte	Result 7770	Qualifier			<u>D</u>	Prepared		
Analyte Total TPH	Result 7770 nge Organics (D	Qualifier			<u>D</u>	Prepared Prepared		1
Analyte Total TPH Method: 8015B NM - Diesel Rai	Result 7770 nge Organics (D	Qualifier RO) (GC)	50.0	mg/Kg			07/27/22 10:58	Dil Fac
Analyte Total TPH Method: 8015B NM - Diesel Rar Analyte Gasoline Range Organics	Result 7770 nge Organics (D	Qualifier RO) (GC)	50.0	mg/Kg		Prepared	07/27/22 10:58  Analyzed	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Ran Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over	Result 7770 nge Organics (D Result 619	Qualifier RO) (GC)	50.0 RL 50.0	mg/Kg  Unit  mg/Kg		Prepared 07/25/22 16:28	07/27/22 10:58  Analyzed  07/26/22 14:27	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rar Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result 7770 nge Organics (D Result 619 6620	Qualifier RO) (GC)	50.0  RL  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 07/25/22 16:28 07/25/22 16:28	07/27/22 10:58  Analyzed  07/26/22 14:27  07/26/22 14:27	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Ran Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result 7770 nge Organics (D Result 619 6620 535	Qualifier RO) (GC)	50.0  RL  50.0  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg  mg/Kg		Prepared 07/25/22 16:28 07/25/22 16:28	07/27/22 10:58  Analyzed  07/26/22 14:27  07/26/22 14:27	
Analyte Total TPH  Method: 8015B NM - Diesel Rai Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Total TPH	Result 7770 nge Organics (D Result 619 6620 535 7770	Qualifier  RO) (GC) Qualifier	50.0  RL  50.0  50.0  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg  mg/Kg		Prepared 07/25/22 16:28 07/25/22 16:28 07/25/22 16:28	07/27/22 10:58  Analyzed 07/26/22 14:27 07/26/22 14:27 07/26/22 14:27	Dil Fac

Job ID: 880-17190-1

Project/Site: Zia Hills 19-2

SDG: Lea County,NM **Client Sample ID: FS05** Lab Sample ID: 880-17190-5

Date Collected: 07/18/22 14:00 Date Received: 07/21/22 08:00

Sample Depth: 0.5

Client: Ensolum

Method: 300.0 - Anions, Ion Chrom	natography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	145		25.2	mg/Kg			07/26/22 05:45	5

**Client Sample ID: FS06** Lab Sample ID: 880-17190-6 Matrix: Solid

Date Collected: 07/18/22 14:25 Date Received: 07/21/22 08:00

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.101	U	0.101	mg/Kg		07/29/22 12:56	07/31/22 19:52	50
Toluene	0.109		0.101	mg/Kg		07/29/22 12:56	07/31/22 19:52	50
Ethylbenzene	0.987		0.101	mg/Kg		07/29/22 12:56	07/31/22 19:52	5
m-Xylene & p-Xylene	3.56		0.201	mg/Kg		07/29/22 12:56	07/31/22 19:52	50
o-Xylene	0.775		0.101	mg/Kg		07/29/22 12:56	07/31/22 19:52	50
Xylenes, Total	4.34		0.201	mg/Kg		07/29/22 12:56	07/31/22 19:52	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	147	S1+	70 - 130			07/29/22 12:56	07/31/22 19:52	50
1,4-Difluorobenzene (Surr)	90		70 - 130			07/29/22 12:56	07/31/22 19:52	5
Method: Total BTEX - Total BTEX C	alculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	5.43		0.201	mg/Kg			07/27/22 09:48	
Total TPH	4650		50.0					
- -	Organics (D	RO) (GC)	30.0	mg/Kg			07/27/22 10:58	
Method: 8015B NM - Diesel Range (		RO) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Method: 8015B NM - Diesel Range ( Analyte Gasoline Range Organics					<u>D</u>	Prepared 07/25/22 16:28		
Method: 8015B NM - Diesel Range ( Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result		RL	Unit	<u>D</u>		Analyzed	Dil Fa
Method: 8015B NM - Diesel Range ( Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over	Result 122		RL 50.0	Unit mg/Kg	<u>D</u>	07/25/22 16:28	<b>Analyzed</b> 07/26/22 14:49	Dil Fa
Method: 8015B NM - Diesel Range ( Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result 122 4170		<b>RL</b> 50.0	unit mg/Kg mg/Kg	<u> </u>	07/25/22 16:28 07/25/22 16:28	Analyzed 07/26/22 14:49 07/26/22 14:49	Dil Fa
Method: 8015B NM - Diesel Range (Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Total TPH	Result 122 4170 354 4650 %Recovery	Qualifier	RL 50.0 50.0 50.0 50.0	Unit mg/Kg mg/Kg mg/Kg	<u>D</u>	07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 <b>Prepared</b>	Analyzed 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49 Analyzed	Dil Fa
Method: 8015B NM - Diesel Range (Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Total TPH Surrogate	Result 122 4170 354 4650 %Recovery 78	Qualifier	RL 50.0 50.0 50.0 50.0	Unit mg/Kg mg/Kg mg/Kg	<u> </u>	07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 07/25/22 16:28	Analyzed 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49	Dil Fa
Method: 8015B NM - Diesel Range (Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Total TPH  Surrogate 1-Chlorooctane	Result 122 4170 354 4650 %Recovery	Qualifier	RL 50.0 50.0 50.0 50.0	Unit mg/Kg mg/Kg mg/Kg	<u>D</u>	07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 <b>Prepared</b>	Analyzed 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49 Analyzed	Dil Fa
Method: 8015B NM - Diesel Range (Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Total TPH  Surrogate 1-Chlorooctane 0-Terphenyl  Method: 300.0 - Anions, Ion Chrom	Result 122 4170 354 4650 %Recovery 78 85 atography -	Qualifier  Qualifier  Soluble	RL 50.0 50.0 50.0 50.0 Limits 70 - 130 70 - 130	Unit mg/Kg mg/Kg mg/Kg		07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 Prepared 07/25/22 16:28	Analyzed 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49  Analyzed 07/26/22 14:49	Dil Fa
Method: 8015B NM - Diesel Range (Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Total TPH  Surrogate 1-Chlorooctane o-Terphenyl	Result 122 4170 354 4650 %Recovery 78 85 atography -	Qualifier Qualifier	RL 50.0 50.0 50.0 50.0 Limits 70 - 130	Unit mg/Kg mg/Kg mg/Kg	<u>D</u>	07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 07/25/22 16:28 Prepared 07/25/22 16:28	Analyzed 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49 07/26/22 14:49  Analyzed 07/26/22 14:49	Dil Fa

# **Surrogate Summary**

Client: Ensolum Job ID: 880-17190-1 Project/Site: Zia Hills 19-2 SDG: Lea County,NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	Percent Surrogate Recovery (Acceptance Lin
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
30-17068-A-21-G MS	Matrix Spike	102	116	
30-17068-A-21-H MSD	Matrix Spike Duplicate	107	117	
80-17190-1	FS01	119	88	
30-17190-2	FS02	146 S1+	92	
0-17190-3	FS03	239 S1+	87	
0-17190-4	FS04	68 S1-	87	
0-17190-5	FS05	279 S1+	87	
0-17190-6	FS06	147 S1+	90	
)-2603-A-1-D MS	Matrix Spike	103	85	
-2603-A-1-E MSD	Matrix Spike Duplicate	107	92	
)-2666-A-3-D MS	Matrix Spike	108	99	
2666-A-3-E MSD	Matrix Spike Duplicate	99	93	
2674-A-2-D MS	Matrix Spike	109	101	
-2674-A-2-E MSD	Matrix Spike Duplicate	105	98	
880-30294/1-A	Lab Control Sample	84	123	
880-30562/1-A	Lab Control Sample	106	94	
880-31008/1-A	Lab Control Sample	100	98	
8 880-31012/1-A	Lab Control Sample	105	101	
D 880-30294/2-A	Lab Control Sample Dup	85	111	
D 880-30562/2-A	Lab Control Sample Dup	104	94	
SD 880-31008/2-A	Lab Control Sample Dup	103	98	
D 880-31012/2-A	Lab Control Sample Dup	111	97	
880-30294/5-A	Method Blank	88	108	
880-30562/5-A	Method Blank	90	84	
880-30664/5-A	Method Blank	100	87	
880-31008/5-A	Method Blank	100	87	
880-31012/5-A	Method Blank	100	86	

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)	
880-17190-1	FS01	78	81	
880-17190-2	FS02	76	79	
880-17190-3	FS03	132 S1+	113	
880-17190-4	FS04	117	87	
880-17190-5	FS05	138 S1+	117	
880-17190-6	FS06	78	85	
890-2603-A-1-G MS	Matrix Spike	77	67 S1-	
890-2603-A-1-H MSD	Matrix Spike Duplicate	66 S1-	56 S1-	
LCS 880-30624/2-A	Lab Control Sample	113	109	
LCSD 880-30624/3-A	Lab Control Sample Dup	101	101	
MB 880-30624/1-A	Method Blank	82	87	

# **Surrogate Summary**

Client: Ensolum
Project/Site: Zia Hills 19-2

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Job ID: 880-17190-1 SDG: Lea County,NM

\_

3

Α

5

7

9

4 4

12

13

12

Client: Ensolum Project/Site: Zia Hills 19-2

Job ID: 880-17190-1 SDG: Lea County,NM

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

Lab Sample ID: MB 880-30294/5-A

**Matrix: Solid** 

Analysis Batch: 30749

Prep Type: Total/NA

Prep Batch: 30294

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 15:51	07/27/22 11:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 15:51	07/27/22 11:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 15:51	07/27/22 11:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 15:51	07/27/22 11:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 15:51	07/27/22 11:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 15:51	07/27/22 11:48	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	07	7/21/22 15:51	07/27/22 11:48	1
1,4-Difluorobenzene (Surr)	108		70 - 130	07	7/21/22 15:51	07/27/22 11:48	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 30294

Prep Type: Total/NA

Prep Batch: 30294

Lab Sample ID: LCS 880-30294/1-A Matrix: Solid

Analysis Batch: 30749

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1018		mg/Kg		102	70 - 130	
Toluene	0.100	0.1066		mg/Kg		107	70 - 130	
Ethylbenzene	0.100	0.1055		mg/Kg		106	70 - 130	
m-Xylene & p-Xylene	0.200	0.2083		mg/Kg		104	70 - 130	
o-Xylene	0.100	0.1026		mg/Kg		103	70 - 130	

LCS LCS

Surrogate	%Recovery G	Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		70 - 130
1,4-Difluorobenzene (Surr)	123		70 - 130

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

**Matrix: Solid** 

**Analysis Batch: 30749** 

Lab Sample ID: LCSD 880-30294/2-A

•	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09468		mg/Kg		95	70 - 130	7	35
Toluene	0.100	0.09904		mg/Kg		99	70 - 130	7	35
Ethylbenzene	0.100	0.1007		mg/Kg		101	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.1979		mg/Kg		99	70 - 130	5	35
o-Xylene	0.100	0.09739		mg/Kg		97	70 - 130	5	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	85	70 - 130
1,4-Difluorobenzene (Surr)	111	70 - 130

Lab Sample ID: MB 880-30562/5-A

**Matrix: Solid** 

Analysis Batch: 30657

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

Prep Batch: 30562

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/25/22 10:57	07/26/22 22:37	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/25/22 10:57	07/26/22 22:37	1

Client: Ensolum

Job ID: 880-17190-1

SDG: Lea County,NM

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

Lab Sample ID: MB 880-30562/5-A

**Matrix: Solid** 

**Analysis Batch: 30657** 

Project/Site: Zia Hills 19-2

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

Prep Batch: 30562

	INID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/25/22 10:57	07/26/22 22:37	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/25/22 10:57	07/26/22 22:37	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/25/22 10:57	07/26/22 22:37	1
Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		07/25/22 10:57	07/26/22 22:37	1

MB MB

Surrogate	%Recovery (	Qualifier	Limits	Prep	pared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130	07/25/2	22 10:57	07/26/22 22:37	1
1,4-Difluorobenzene (Surr)	84		70 - 130	07/25/2	22 10:57	07/26/22 22:37	1

Lab Sample ID: LCS 880-30562/1-A

**Matrix: Solid** 

Analysis Batch: 30657

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 30562

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09490		mg/Kg		95	70 - 130	
Toluene	0.100	0.09745		mg/Kg		97	70 - 130	
Ethylbenzene	0.100	0.1000		mg/Kg		100	70 - 130	
m-Xylene & p-Xylene	0.200	0.2002		mg/Kg		100	70 - 130	
o-Xylene	0.100	0.1107		mg/Kg		111	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	106	70 - 130
1,4-Difluorobenzene (Surr)	94	70 - 130

Lab Sample ID: LCSD 880-30562/2-A

**Matrix: Solid** 

**Analysis Batch: 30657** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30562

	Spike	LCSD	LCSD				%Rec		RPD
Analyte A	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1003		mg/Kg		100	70 - 130	6	35
Toluene	0.100	0.1020		mg/Kg		102	70 - 130	5	35
Ethylbenzene	0.100	0.1039		mg/Kg		104	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.2077		mg/Kg		104	70 - 130	4	35
o-Xylene	0.100	0.1145		mg/Kg		114	70 - 130	3	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	94	70 - 130

Lab Sample ID: MB 880-30664/5-A

**Matrix: Solid** 

Analysis Batch: 30657

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30664

мв мв

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg	_	07/26/22 09:25	07/26/22 12:01	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/26/22 09:25	07/26/22 12:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/26/22 09:25	07/26/22 12:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/26/22 09:25	07/26/22 12:01	1

**Eurofins Midland** 

Page 14 of 28

Client: Ensolum

Project/Site: Zia Hills 19-2

Job ID: 880-17190-1

SDG: Lea County,NM

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

Lab Sample ID: MB 880-30664/5-A

**Matrix: Solid** 

Analysis Batch: 30657

Client	Sample	e ID:	Meth	od	В	lar	١k	(
	_		_	_				

Prep Type: Total/NA Prep Batch: 30664

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/26/22 09:25	07/26/22 12:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/26/22 09:25	07/26/22 12:01	1

мв мв

мв мв

	11.2 11.2				
Surrogate %Re	covery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100	70 - 130	07/26/22 09:25	07/26/22 12:01	1
1,4-Difluorobenzene (Surr)	87	70 - 130	07/26/22 09:25	07/26/22 12:01	1

**Client Sample ID: Method Blank** 

Lab Sample ID: MB 880-31008/5-A **Matrix: Solid** 

Prep Type: Total/NA Prep Batch: 31008

**Analysis Batch: 31093** 

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/29/22 12:56	07/31/22 12:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/29/22 12:56	07/31/22 12:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/29/22 12:56	07/31/22 12:18	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/29/22 12:56	07/31/22 12:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/29/22 12:56	07/31/22 12:18	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/29/22 12:56	07/31/22 12:18	1
The state of the s								

мв мв

Surrogate	%Recovery	Qualifier	Limits	F	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	07/2	29/22 12:56	07/31/22 12:18	1
1,4-Difluorobenzene (Surr)	87		70 - 130	07/2	29/22 12:56	07/31/22 12:18	1

Lab Sample ID: LCS 880-31008/1-A

**Matrix: Solid** 

**Analysis Batch: 31093** 

Client S	ample ID:	Lab	Control	Sample

**Prep Type: Total/NA** 

Prep Batch: 31008

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08240		mg/Kg		82	70 - 130	
Toluene	0.100	0.07858		mg/Kg		79	70 - 130	
Ethylbenzene	0.100	0.08153		mg/Kg		82	70 - 130	
m-Xylene & p-Xylene	0.200	0.1657		mg/Kg		83	70 - 130	
o-Xylene	0.100	0.09065		mg/Kg		91	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	100	70 - 130
1,4-Difluorobenzene (Surr)	98	70 - 130

Lab Sample ID: LCSD 880-31008/2-A

Matrix: Solid

**Analysis Batch: 31093** 

Client	Sample	ID: I ah	Control	Sample	Dun

Prep Type: Total/NA

Prep Batch: 31008

	Spike	LCSD	LCSD				%Rec		RPD
	Spike	LUSD	LUSD				/orec		KFD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1013		mg/Kg		101	70 - 130	21	35
Toluene	0.100	0.09750		mg/Kg		98	70 - 130	21	35
Ethylbenzene	0.100	0.1006		mg/Kg		101	70 - 130	21	35
m-Xylene & p-Xylene	0.200	0.2029		mg/Kg		101	70 - 130	20	35
o-Xylene	0.100	0.1108		mg/Kg		111	70 - 130	20	35

# **QC Sample Results**

Client: Ensolum Job ID: 880-17190-1 SDG: Lea County,NM Project/Site: Zia Hills 19-2

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

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

Lab Sample ID: MB 880-31012/5-A

**Matrix: Solid** 

**Analysis Batch: 31093** 

Client Sampl	e ID:	Method	Blank
--------------	-------	--------	-------

Prep Type: Total/NA Prep Batch: 31012

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/29/22 13:33	07/31/22 22:55	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/29/22 13:33	07/31/22 22:55	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/29/22 13:33	07/31/22 22:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/29/22 13:33	07/31/22 22:55	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/29/22 13:33	07/31/22 22:55	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/29/22 13:33	07/31/22 22:55	1

MB MB

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	07/29/22 13:33	07/31/22 22:55	1
1,4-Difluorobenzene (Surr)	86		70 - 130	07/29/22 13:33	07/31/22 22:55	1

Lab Sample ID: LCS 880-31012/1-A

**Matrix: Solid** 

**Analysis Batch: 31093** 

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

Prep Batch: 31012

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09484		mg/Kg		95	70 - 130	
Toluene	0.100	0.08991		mg/Kg		90	70 - 130	
Ethylbenzene	0.100	0.09258		mg/Kg		93	70 - 130	
m-Xylene & p-Xylene	0.200	0.1866		mg/Kg		93	70 - 130	
o-Xylene	0.100	0.09997		mg/Kg		100	70 - 130	

LCS LCS

Surrogate	%Recovery Qua	lifier Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1.4-Difluorobenzene (Surr)	101	70 - 130

Lab Sample ID: LCSD 880-31012/2-A

**Matrix: Solid** 

**Analysis Batch: 31093** 

Client Sample ID: Lab Control Sample Dup

**Prep Type: Total/NA** 

Prep Batch: 31012

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08621		mg/Kg		86	70 - 130	10	35
Toluene	0.100	0.08683		mg/Kg		87	70 - 130	3	35
Ethylbenzene	0.100	0.09088		mg/Kg		91	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1891		mg/Kg		95	70 - 130	1	35
o-Xylene	0.100	0.1128		mg/Kg		113	70 - 130	12	35

LCSD LCSD

Surrogate	%Recovery Qua	alifier Limits
4-Bromofluorobenzene (Surr)	111	70 - 130
1.4-Difluorobenzene (Surr)	97	70 - 130

# QC Sample Results

Client: Ensolum Job ID: 880-17190-1 Project/Site: Zia Hills 19-2 SDG: Lea County, NM

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

Lab Sample ID: MB 880-30624/1-A

**Matrix: Solid** Analysis Batch: 30643 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30624

	MB	MB									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac			
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		07/25/22 16:28	07/26/22 09:44	1			
(GRO)-C6-C10											
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		07/25/22 16:28	07/26/22 09:44	1			
C10-C28)											
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/25/22 16:28	07/26/22 09:44	1			
Total TPH	<50.0	U	50.0	mg/Kg		07/25/22 16:28	07/26/22 09:44	1			

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130	07/25/22 16:28	07/26/22 09:44	1
o-Terphenyl	87		70 - 130	07/25/22 16:28	07/26/22 09:44	1

Lab Sample ID: LCS 880-30624/2-A

**Matrix: Solid** 

**Analysis Batch: 30643** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30624

LCS LCS Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 922.1 92 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 1096 mg/Kg 110 70 - 130 C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits	
1-Chlorooctane	113		70 - 130	
o-Terphenyl	109		70 - 130	

Lab Sample ID: LCSD 880-30624/3-A

**Matrix: Solid** 

Analysis Batch: 30643

Gasoline Range Organics

Diesel Range Organics (Over

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 30624

LCSD LCSD %Rec RPD Spike Added Result Qualifier Unit D %Rec Limits **RPD** Limit 1000 836.9 84 70 - 13010 20 mg/Kg 1000 975.9 mg/Kg 98 70 - 13012 20

C10-C28)

(GRO)-C6-C10

Analyte

LCSD LCSD

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30247/1-A

**Matrix: Solid** 

Analysis Batch: 30493

Client Sample ID: Method Blank

**Prep Type: Soluble** 

MB MB

Analyte Result Qualifier RL Unit D Dil Fac Prepared Analyzed Chloride 5.00 <5.00 U mg/Kg 07/26/22 02:21

Analyte

%Rec

Limits

# **QC Sample Results**

Client: Ensolum
Project/Site: Zia Hills 19-2
Job ID: 880-17190-1
SDG: Lea County,NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

П	Lab Sample ID: LCS 880-30247/2-A Matrix: Solid			Client Sample ID: Lab Control Sample Prep Type: Soluble
l	Analysis Batch: 30493			
Т		Snike	LCS LCS	%Rac

Result Qualifier

Unit

Chloride	250	263.3	mg/Kg	105	90 - 110		
Lab Sample ID: LCSD 880-30247/3-A Matrix: Solid Analysis Batch: 30493			Client Sa	mple ID:	Lab Contro Prep	l Sample D Type: Solu	

Added

Matrix. John							ı i ep	Type. o	Jiubie
Analysis Batch: 30493									
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	 250	263.8		mg/Kg		106	90 - 110	0	20

Client: Ensolum

Project/Site: Zia Hills 19-2

Job ID: 880-17190-1 SDG: Lea County,NM

# **GC VOA**

# Prep Batch: 30294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-2	FS02	Total/NA	Solid	5035	
MB 880-30294/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30294/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30294/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

#### Prep Batch: 30562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-1	FS01	Total/NA	Solid	5035	
MB 880-30562/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30562/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30562/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

#### Analysis Batch: 30657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-1	FS01	Total/NA	Solid	8021B	30562
MB 880-30562/5-A	Method Blank	Total/NA	Solid	8021B	30562
MB 880-30664/5-A	Method Blank	Total/NA	Solid	8021B	30664
LCS 880-30562/1-A	Lab Control Sample	Total/NA	Solid	8021B	30562
LCSD 880-30562/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30562

#### Prep Batch: 30664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30664/5-A	Method Blank	Total/NA	Solid	5035	

#### Analysis Batch: 30749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-2	FS02	Total/NA	Solid	8021B	30294
MB 880-30294/5-A	Method Blank	Total/NA	Solid	8021B	30294
LCS 880-30294/1-A	Lab Control Sample	Total/NA	Solid	8021B	30294
LCSD 880-30294/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30294

#### Analysis Batch: 30789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-1	FS01	Total/NA	Solid	Total BTEX	
880-17190-2	FS02	Total/NA	Solid	Total BTEX	
880-17190-3	FS03	Total/NA	Solid	Total BTEX	
880-17190-4	FS04	Total/NA	Solid	Total BTEX	
880-17190-5	FS05	Total/NA	Solid	Total BTEX	
880-17190-6	FS06	Total/NA	Solid	Total BTEX	

#### Prep Batch: 31008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-3	FS03	Total/NA	Solid	5035	
880-17190-4	FS04	Total/NA	Solid	5035	
880-17190-5	FS05	Total/NA	Solid	5035	
880-17190-6	FS06	Total/NA	Solid	5035	
MB 880-31008/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31008/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31008/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Eurofins Midland

Released to Imaging: 6/21/2023 2:22:52 PM

2

5

\_\_

7

9

11

40

1 1

Client: Ensolum

Project/Site: Zia Hills 19-2

Job ID: 880-17190-1

SDG: Lea County,NM

# **GC VOA**

# Prep Batch: 31012

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	MB 880-31012/5-A	Method Blank	Total/NA	Solid	5035	
	LCS 880-31012/1-A	Lab Control Sample	Total/NA	Solid	5035	
l	LCSD 880-31012/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

#### **Analysis Batch: 31093**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-3	FS03	Total/NA	Solid	8021B	31008
880-17190-4	FS04	Total/NA	Solid	8021B	31008
880-17190-5	FS05	Total/NA	Solid	8021B	31008
880-17190-6	FS06	Total/NA	Solid	8021B	31008
MB 880-31008/5-A	Method Blank	Total/NA	Solid	8021B	31008
MB 880-31012/5-A	Method Blank	Total/NA	Solid	8021B	31012
LCS 880-31008/1-A	Lab Control Sample	Total/NA	Solid	8021B	31008
LCS 880-31012/1-A	Lab Control Sample	Total/NA	Solid	8021B	31012
LCSD 880-31008/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31008
LCSD 880-31012/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31012

# GC Semi VOA

#### Prep Batch: 30624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-1	FS01	Total/NA	Solid	8015NM Prep	
880-17190-2	FS02	Total/NA	Solid	8015NM Prep	
880-17190-3	FS03	Total/NA	Solid	8015NM Prep	
880-17190-4	FS04	Total/NA	Solid	8015NM Prep	
880-17190-5	FS05	Total/NA	Solid	8015NM Prep	
880-17190-6	FS06	Total/NA	Solid	8015NM Prep	
MB 880-30624/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30624/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30624/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

#### Analysis Batch: 30643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-1	FS01	Total/NA	Solid	8015B NM	30624
880-17190-2	FS02	Total/NA	Solid	8015B NM	30624
880-17190-3	FS03	Total/NA	Solid	8015B NM	30624
880-17190-4	FS04	Total/NA	Solid	8015B NM	30624
880-17190-5	FS05	Total/NA	Solid	8015B NM	30624
880-17190-6	FS06	Total/NA	Solid	8015B NM	30624
MB 880-30624/1-A	Method Blank	Total/NA	Solid	8015B NM	30624
LCS 880-30624/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30624
LCSD 880-30624/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30624

# **Analysis Batch: 30798**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-1	FS01	Total/NA	Solid	8015 NM	
880-17190-2	FS02	Total/NA	Solid	8015 NM	
880-17190-3	FS03	Total/NA	Solid	8015 NM	
880-17190-4	FS04	Total/NA	Solid	8015 NM	
880-17190-5	FS05	Total/NA	Solid	8015 NM	
880-17190-6	FS06	Total/NA	Solid	8015 NM	

**Eurofins Midland** 

Page 20 of 28

Client: Ensolum

Project/Site: Zia Hills 19-2

Job ID: 880-17190-1

# SDG: Lea County,NM

# HPLC/IC

#### Leach Batch: 30247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-1	FS01	Soluble	Solid	DI Leach	
880-17190-2	FS02	Soluble	Solid	DI Leach	
880-17190-3	FS03	Soluble	Solid	DI Leach	
880-17190-4	FS04	Soluble	Solid	DI Leach	
880-17190-5	FS05	Soluble	Solid	DI Leach	
880-17190-6	FS06	Soluble	Solid	DI Leach	
MB 880-30247/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30247/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30247/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

#### **Analysis Batch: 30493**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17190-1	FS01	Soluble	Solid	300.0	30247
880-17190-2	FS02	Soluble	Solid	300.0	30247
880-17190-3	FS03	Soluble	Solid	300.0	30247
880-17190-4	FS04	Soluble	Solid	300.0	30247
880-17190-5	FS05	Soluble	Solid	300.0	30247
880-17190-6	FS06	Soluble	Solid	300.0	30247
MB 880-30247/1-A	Method Blank	Soluble	Solid	300.0	30247
LCS 880-30247/2-A	Lab Control Sample	Soluble	Solid	300.0	30247
LCSD 880-30247/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30247

Job ID: 880-17190-1

Client: Ensolum Project/Site: Zia Hills 19-2 SDG: Lea County,NM

**Client Sample ID: FS01** Lab Sample ID: 880-17190-1

Date Collected: 07/14/22 11:15 Matrix: Solid Date Received: 07/21/22 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			30562	07/25/22 10:57	EL	XEN MID
Total/NA	Analysis	8021B		100	30657	07/27/22 06:31	MR	XEN MID
Total/NA	Analysis	Total BTEX		1	30789	07/27/22 09:48	SM	XEN MID
Total/NA	Analysis	8015 NM		1	30798	07/27/22 10:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			30624	07/25/22 16:28	DM	XEN MID
Total/NA	Analysis	8015B NM		1	30643	07/26/22 13:01	AJ	XEN MID
Soluble	Leach	DI Leach			30247	07/21/22 12:30	SMC	XEN MID
Soluble	Analysis	300.0		1	30493	07/26/22 11:07	CH	XEN MID

**Client Sample ID: FS02** Lab Sample ID: 880-17190-2

Date Collected: 07/14/22 11:30 Matrix: Solid

Date Received: 07/21/22 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			30294	07/21/22 15:51	MR	XEN MID
Total/NA	Analysis	8021B		20	30749	07/27/22 17:21	MR	XEN MID
Total/NA	Analysis	Total BTEX		1	30789	07/27/22 09:48	SM	XEN MID
Total/NA	Analysis	8015 NM		1	30798	07/27/22 10:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			30624	07/25/22 16:28	DM	XEN MID
Total/NA	Analysis	8015B NM		1	30643	07/26/22 13:22	AJ	XEN MID
Soluble	Leach	DI Leach			30247	07/21/22 12:30	SMC	XEN MID
Soluble	Analysis	300.0		10	30493	07/26/22 05:06	CH	XEN MID

**Client Sample ID: FS03** Lab Sample ID: 880-17190-3

Date Collected: 07/18/22 10:00 Date Received: 07/21/22 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			31008	07/29/22 12:56	EL	XEN MID
Total/NA	Analysis	8021B		50	31093	07/31/22 18:50	MR	XEN MID
Total/NA	Analysis	Total BTEX		1	30789	07/27/22 09:48	SM	XEN MID
Total/NA	Analysis	8015 NM		1	30798	07/27/22 10:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			30624	07/25/22 16:28	DM	XEN MID
Total/NA	Analysis	8015B NM		1	30643	07/26/22 13:44	AJ	XEN MID
Soluble	Leach	DI Leach			30247	07/21/22 12:30	SMC	XEN MID
Soluble	Analysis	300.0		1	30493	07/26/22 11:15	CH	XEN MID

**Client Sample ID: FS04** Lab Sample ID: 880-17190-4 Date Collected: 07/18/22 10:25 **Matrix: Solid** 

Date Received: 07/21/22 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			31008	07/29/22 12:56	EL	XEN MID
Total/NA	Analysis	8021B		50	31093	07/31/22 19:10	MR	XEN MID
Total/NA	Analysis	Total BTEX		1	30789	07/27/22 09:48	SM	XEN MID

**Eurofins Midland** 

**Matrix: Solid** 

Released to Imaging: 6/21/2023 2:22:52 PM

Project/Site: Zia Hills 19-2

Date Received: 07/21/22 08:00

Client: Ensolum

Job ID: 880-17190-1 SDG: Lea County, NM

Client Sample ID: FS04 Lab Sample ID: 880-17190-4 Date Collected: 07/18/22 10:25

Matrix: Solid

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1	30798	07/27/22 10:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			30624	07/25/22 16:28	DM	XEN MID
Total/NA	Analysis	8015B NM		1	30643	07/26/22 14:06	AJ	XEN MID
Soluble	Leach	DI Leach			30247	07/21/22 12:30	SMC	XEN MID
Soluble	Analysis	300.0		1	30493	07/26/22 05:38	СН	XEN MID

**Client Sample ID: FS05** Lab Sample ID: 880-17190-5

**Matrix: Solid** 

Date Collected: 07/18/22 14:00 Date Received: 07/21/22 08:00

Batch Batch Dilution Batch Prepared Method Run Number **Prep Type** Type Factor or Analyzed Analyst Lab Prep Total/NA 5035 31008 07/29/22 12:56 EL XEN MID Total/NA Analysis 8021B 50 31093 07/31/22 19:31 MR XEN MID Total/NA Analysis Total BTEX 1 30789 07/27/22 09:48 SM **XEN MID** Total/NA 8015 NM 30798 07/27/22 10:58 XEN MID Analysis SM 1 Total/NA Prep 8015NM Prep 30624 07/25/22 16:28 DM XEN MID Total/NA 8015B NM 30643 07/26/22 14:27 XEN MID Analysis AJ1 Soluble Leach DI Leach 30247 07/21/22 12:30 SMC XEN MID Soluble Analysis 300.0 5 30493 07/26/22 05:45 CH XEN MID

Client Sample ID: FS06 Lab Sample ID: 880-17190-6

1

Date Collected: 07/18/22 14:25 **Matrix: Solid** Date Received: 07/21/22 08:00

30493

07/26/22 05:53

СН

XEN MID

Batch Batch Dilution Batch Prepared Method **Prep Type** Run Factor Number or Analyzed Lab Type Analyst Total/NA Prep 5035 31008 07/29/22 12:56 EL XEN MID Total/NA 8021B 50 31093 07/31/22 19:52 MR XEN MID Analysis Analysis Total BTEX XEN MID Total/NA 1 30789 07/27/22 09:48 SM Total/NA Analysis 8015 NM 30798 07/27/22 10:58 SM XEN MID 1 Total/NA Prep 8015NM Prep 30624 07/25/22 16:28 DM XEN MID Total/NA Analysis 8015B NM 30643 07/26/22 14:49 XEN MID 1 AJ Soluble Leach DI Leach 30247 07/21/22 12:30 SMC XEN MID

**Laboratory References:** 

Analysis

Soluble

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

300.0

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 880-17190-1 Project/Site: Zia Hills 19-2 SDG: Lea County,NM

#### **Laboratory: Eurofins Midland**

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

Authority Texas		Program	Identification Number	Expiration Date 06-30-23	
		NELAP	T104704400-22-24		
The following analytes the agency does not of	' '	, but the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes for whicl	
Analysis Method	Prep Method	Matrix	Analyte		
8015 NM		Solid	Total TPH		
8015B NM	8015NM Prep	Solid	Total TPH		
Total BTEX		Solid	Total BTEX		

# **Method Summary**

Client: Ensolum

Project/Site: Zia Hills 19-2

Job ID: 880-17190-1

SDG: Lea County,NM

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

#### **Protocol References:**

ASTM = ASTM International

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

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

# **Sample Summary**

Client: Ensolum

Project/Site: Zia Hills 19-2

Job ID: 880-17190-1

SDG: Lea County,NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-17190-1	FS01	Solid	07/14/22 11:15	07/21/22 08:00	0.5
880-17190-2	FS02	Solid	07/14/22 11:30	07/21/22 08:00	0.5
880-17190-3	FS03	Solid	07/18/22 10:00	07/21/22 08:00	0.5
880-17190-4	FS04	Solid	07/18/22 10:25	07/21/22 08:00	0.5
880-17190-5	FS05	Solid	07/18/22 14:00	07/21/22 08:00	0.5
880-17190-6	FS06	Solid	07/18/22 14:25	07/21/22 08:00	0.5

**eurofins** 

Xenco 0

Project Manager

Kalei Jennings

Bill to: (if different)

Kalei Jennings Ensolum, LLC

State of Project:

Program. UST/PST \_PRP \_Brownfields \_RRC

Superfund

**Work Order Comments** 

Company Name

Company Name

Ensolum

City, State ZIP

Midland, TX 79701

601 North Marienfeld Street

# **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

	-
www xenco com	Work Order No:
Pageof	

City, State ZIP Phone	Midland, TX 79701 817-683-2503		E mail	City, State ZIP:	2								<u> </u>	7 7	porting	Reporting Level II	; <u>e</u>		/el III	; <b>-</b>	PST/US7	Ī	,且	, 71	RR		RRP   Level IV
Name	Zia Hılls 19-1	-1		Turn Around							2	ANALYSIS REQUEST	2   L	ੂ   ਿ	<b>4</b>			4			<u> </u>	11	ž    ,			Constitution	
Project Number	03D2024049	49	✓ Routine	Rush	Pres.			1	$\exists$	┨	寸:	1	-	-	- -	$\dashv$	4		٦	$\dashv$	<u>_</u>	None NO	5		146	) AGIIA	NO DI Water I
Project Location	Lea County, NM	M	Due Date.	5 day TAT			T	寸	1	寸	$\top$	$\top$	$\dashv$	+	$\dashv$	$\dashv$	_		$\top$	+	<u></u>	Cool Cool	3 (			<b>.</b> .	Mena Marier n <sub>2</sub> O
Sampler's Name	Lız Chelı		TAT starts the	TAT starts the day received by																	I (	HCL HC	<u>გ</u>			I 3	HNO, HN
PO#			the lab if rec	erved by 4 30pm	's														-		<u> </u>	H,SO, H,	Ţ			2 :	NaOH Na
SAMPLE RECEIPT	Temp Blank.	Yes Ma	Wet Ice	Kes No	eter	)	***************************************														Ξ.	ָם מַּ	F 2			2	ā
Samples Received Intact:			ō	200	am	10.0																	, " :		? ?	5	5
Cooler Custody Seals	Yes No	- 1	22424	بر بر بر	Par	. 30																aHy	Natiso <sub>4</sub> Nabis		ABIX	ABIS	ABIS
Cooler Custouy Seals	NO N/A	Correction Factor	actor.	4.4	F	ЭΑ.							, .								z	a2S2	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> NaSO <sub>3</sub>		aSC	aSO <sub>3</sub>	aSO <sub>3</sub>
Sample Custody Seals:	s' (Yes) No N/A	Temperature Reading	Reading	ì٦		(EF															7	n Acc	state-	-	Ż	HOKEN HOKEN	Zn Acetate+NaOH Zn
Total Containers		Corrected Temperature	emperature.	- 9		DES	15)	021)												<u> </u>	Z I	a OH	+Asc	~	orbic i	orbic Aci	NaOH+Ascorbic Acid SAPC
Sample Identification	lification Matrix	Date Sampled	Time Sampled	Depth Grab/	# of	HLORI	PH (80	TEX (8															Sam		<u></u>	ole Con	Sample Comments
FS01	S	7/14/2022	11 15	0.5 Comp	_		×	×E			1		$\top$	$\dashv$		-	$\bot$			+	+	100	<u> </u>	. ·	z	NADD	Incident ID NAPP2215827276
FS02	S	7/14/2022	11 30	0.5 Comp	1	×	×	×			7	7	-	7	$\dashv$	$\dashv$	$\bot$		7	$\dashv$	-				:		
FS03	S	7/18/2022	10 00	0 5 Comp	_	×	×	×	1						$\dashv$	$\dashv$				$\dashv$	_	ost	Cost Center		9	97	9r.
FS04	S	7/18/2022	10 25	0.5 Comp	<b>-</b>	×	×	×			1		$\neg$	$\dashv$	$\dashv$	$\dashv$		-		$\dashv$	4				19	]	
FS05	S	7/18/2022	14 00	0 5 Comp		×	×	×			1		$\dashv$	$\dashv$	$\dashv$	-	_		1	$\dashv$	$\downarrow$	AFE					
FS06	S	7/18/2022	14 25	0.5 Comp		×	×	×					$\dashv$	$\dashv$	$\dashv$	_}	$\perp$			$\dashv$	.	ľ			-		
										$\exists$	$\exists$			$\dashv$	$\dashv$	$\dashv$	$\perp$		П	$\vdash \vdash$	$\sqcup$						
																			1 1	H	$\mathbb{H}$			,			
Total 200.7 / 6010	10 200.8 / 6020:		8RCRA 13PPM	PM Texas 11	≥	Sb As	Ba	Ве В	δ	œ =	30-17.	880-17190 Chain of Custodic							, H	SIO <sub>2</sub>	Na	Sr		27/11	Na Sr TI Sn U	οn U V	àn U V Zn
Circle Method(s) and	Circle Method(s) and Metal(s) to be analyzed	/zed	TCLP / SI	TCLP / SPLP 6010 8R	8RCRA	Sb /	Sb As Ba Be Cd (	Ве	Cd (	ľ <sub>1</sub> ,			ă	Cus	lody			1	ko		1/2	45 1	17	441	470 /	470 / 74	1631 / 245 1 / 7470 / 7471
Notice Signature of this do of service. Eurofins Xenco of Eurofins Xenco. A minin	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 \$95.00 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 negotia	of samples const st of samples and applied to each p	itutes a valid pur shall not assum sroject and a cha	chase order from cli e any responsibility rge of \$5 for each sa	ient cor for any ample s	npany t losses ubmitte	o Eurofi or expe ed to Eu	ns Xeno nses inc rofins X	co, its at curred t enco, b	filiates by the c ut not a	and sut lient if s nalyzed	contrac uch los	tors. I	tors. It assigns standard terms and conditions ses are due to circumstances beyond the control terms will be enforced unless previously negotiated.	s stanc circum	lard to stance:	rms a s beyo	nd cor	ndition a cont	rol tiated.				₩			
Relinquished by (Signature)	(Signature)	Received by:	d by: (Signature)	ure)		Date	Date/Time		٦	elingi	ishec	Relinquished by: (Signature)	Signa	ture)	-	امرا	ece!	ved	by (	Received by (Signature)	ature	$\subseteq$				Dat	Date/Time
1 Kalen Jennogo	W Sprus	angen			<u> </u>	रेव	ج	3	2 2						++								+				
5							2	2	0						+								+	1			
									o						_								_				

# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 880-17190-1

SDG Number: Lea County,NM

List Source: Eurofins Midland

Login Number: 17190 List Number: 1 Creator: Teel, Brianna

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	

1

2

3

4

6

8

11

46

14



APPENDIX E

**NMOCD Notifications** 

From: Nobui, Jennifer, EMNRD

To: Kalei Jennings

Cc: Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Harimon, Jocelyn, EMNRD

Subject: FW: [EXTERNAL] COP-Sampling Notification (Week of 07/11/22-07/15/22)

**Date:** Friday, July 8, 2022 9:18:09 AM

Attachments: <u>image001.png</u>

image002.png image003.png image004.png

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

Kalei

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thanks,

Jennifer Nobui

From: Enviro, OCD, EMNRD < OCD. Enviro@state.nm.us>

**Sent:** Friday, July 8, 2022 8:13 AM

To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD

<Jennifer.Nobui@state.nm.us>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@state.nm.us>; Velez,

Nelson, EMNRD < Nelson. Velez@state.nm.us>; Hamlet, Robert, EMNRD

<Robert.Hamlet@state.nm.us>

Subject: Fw: [EXTERNAL] COP-Sampling Notification (Week of 07/11/22-07/15/22)

**From:** Kalei Jennings < <u>kiennings@ensolum.com</u>>

**Sent:** Thursday, July 7, 2022 2:16 PM

To: Enviro, OCD, EMNRD < OCD. Enviro@state.nm.us >

**Subject:** [EXTERNAL] COP-Sampling Notification (Week of 07/11/22-07/15/22)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

COP plans to complete final sampling activities at the following sites the week of July 11, 2022.

Monday:

Tuesday:

Wednesday:

Raspberry State Com 001H / NAPP2213029810

Thursday:

• Zia Hills 19-1 / NAPP2215827276

Friday:

Thank you,





From: Nobui, Jennifer, EMNRD

To: Kalei Jennings

Cc: Bratcher, Mike, EMNRD; Harimon, Jocelyn, EMNRD; Hamlet, Robert, EMNRD

Subject: FW: [EXTERNAL] COP- Sampling Notification (Week of 07/18/22-07/22/22)

**Date:** Thursday, July 14, 2022 12:04:58 PM

Attachments: <u>image001.png</u>

image002.png image003.png image004.png

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

Kalei

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thanks,

Jennifer Nobui

From: Enviro, OCD, EMNRD < OCD. Enviro@state.nm.us>

Sent: Thursday, July 14, 2022 10:39 AM

**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Velez, Nelson, EMNRD

<Nelson.Velez@state.nm.us>

Subject: Fw: [EXTERNAL] COP- Sampling Notification (Week of 07/18/22-07/22/22)

**From:** Kalei Jennings < <u>kiennings@ensolum.com</u>>

Sent: Thursday, July 14, 2022 10:35 AM

To: Enviro, OCD, EMNRD < OCD. Enviro@state.nm.us>

**Subject:** [EXTERNAL] COP- Sampling Notification (Week of 07/18/22-07/22/22)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

COP plans to complete final sampling activities at the following sites the week of July 18, 2022.

#### Monday:

• Zia Hills 19-1 / NAPP2215827276

#### Tuesday:

King Tut Federal Com 001H / NAPP2127234076

Wed	nesc	lay
-----	------	-----

• King Tut Federal Com 001H / NAPP2127234076

Thursday:

Friday:

Thank you,



# Kalei Jennings Senior Scientist 817-683-2503 Ensolum, LLC

From: Beauvais, Charles R
To: Kalei Jennings

Subject: FW: [EXTERNAL] Extension Request - Zia Hills 19-1 (Incident Number NAPP2215827276)

**Date:** Monday, August 22, 2022 11:43:38 AM

Attachments: <u>image001.png</u>

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

FYI

From: Nobui, Jennifer, EMNRD < Jennifer. Nobui@state.nm.us>

Sent: Monday, August 22, 2022 10:30 AM

**To:** Beauvais, Charles R < Charles.R.Beauvais@conocophillips.com>

**Cc:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@state.nm.us>

Subject: FW: [EXTERNAL] Extension Request - Zia Hills 19-1 (Incident Number NAPP2215827276)

**CAUTION**: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

#### Charles

Your request for an extension to **November 19th, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

Thanks

Jennifer Nobui

From: Enviro, OCD, EMNRD < OCD. Enviro@state.nm.us>

**Sent:** Monday, August 22, 2022 10:17 AM

To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD

<<u>Jennifer.Nobui@state.nm.us</u>>; Harimon, Jocelyn, EMNRD <<u>Jocelyn.Harimon@state.nm.us</u>>; Velez,

Nelson, EMNRD < Nelson. Velez@state.nm.us >; Hamlet, Robert, EMNRD

<<u>Robert.Hamlet@state.nm.us</u>>

Subject: Fw: [EXTERNAL] Extension Request - Zia Hills 19-1 (Incident Number NAPP2215827276)

**From:** Beauvais, Charles R < <a href="mailto:Charles.R.Beauvais@conocophillips.com">Charles.R.Beauvais@conocophillips.com</a>

**Sent:** Monday, August 22, 2022 10:09 AM

**To:** Enviro, OCD, EMNRD < <u>OCD.Enviro@state.nm.us</u>>; EMNRD-OCD-District1spills < <u>EMNRD-OCD-District1spills@state.nm.us</u>>; Hamlet, Robert, EMNRD < <u>Robert.Hamlet@state.nm.us</u>>; CFO\_Spill,

BLM\_NM < BLM\_NM\_CFO\_Spill@blm.gov>

**Cc:** Fejervary Morena, Gustavo A < <u>G.Fejervary@conocophillips.com</u>>; Esparza, Brittany

<Brittany.Esparza@conocophillips.com>

**Subject:** [EXTERNAL] Extension Request - Zia Hills 19-1 (Incident Number NAPP2215827276)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

To Whom It May Concern,

ConocoPhillips Company (COP) is requesting an extension for the current deadline of August 21, 2022, for submitting a remediation work plan or closure report required in 19.15.29.12.B.(1) NMAC for Zia Hills 19-1 (Incident Number NAPP2215827276). The release was discovered on May 23, 2022, and initial site assessment activities have been completed. The release occurred within equipment and saturated soil was hand shoveled to the extent possible. Residual hydrocarbons were treated on August 3, 2022 with Microblaze to aid in the natural attenuation process. Based on the most recent laboratory analytical results, the first application of Microblaze has not reduced residual hydrocarbon concentrations to below the Closure Criteria. In order to allow flowback equipment to be removed, complete additional remediation activities, and allow time to submit a remediation work plan or closure report, COP requests a 90-day extension of this deadline until November 19, 2022.

Respectfully,

# Charles R. Beauvais II

Senior Environmental Engineer | Environmental Operations | ConocoPhillips (M) 575-988-2043

Charles.R.Beauvais@conocophillips.com

Our work is never so urgent or important that we cannot take the time to do it safely and in an environmentally responsible manner.



From: OCDOnline@state.nm.us

To: Kalei Jennings

Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 160446

**Date:** Monday, December 19, 2022 12:59:51 PM

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

To whom it may concern (c/o Kalei Jennings for CONOCOPHILLIPS COMPANY),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2215827276, for the following reasons:

• Deferral Request Denied. The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. Please submit dtw data before OCD can evaluate the deferral. Please submit a revised Deferral Request by January 19, 2023.

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 160446.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you, Jennifer Nobui Environmental Specialist-Advanced 505-470-3407 Jennifer.Nobui@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505 From: OCDOnline@state.nm.us

To: Kalei Jennings

Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 182573

**Date:** Tuesday, February 21, 2023 2:15:04 PM

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

To whom it may concern (c/o Kalei Jennings for CONOCOPHILLIPS COMPANY),

The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2215827276, with the following conditions:

# Remediation Plan Approved.

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you, Jennifer Nobui Environmental Specialist-Advanced 505-470-3407 Jennifer.Nobui@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505

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 210121

### **CONDITIONS**

Operator:	OGRID:
CONOCOPHILLIPS COMPANY	217817
600 W. Illinois Avenue	Action Number:
Midland, TX 79701	210121
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

-	Condition	Condition
Ву		Date
nvelez	Deferral request approved.	6/21/2023