



July 7, 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: Closure Request
MCA 400
Incident Number NAPP2305455050
Lea County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of Maverick Permian, LLC (Maverick), has prepared this Closure Request to document assessment and soil sampling activities at the MCA 400 (Site). The purpose of the Site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of crude oil and produced water at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, Maverick is submitting this Closure Request and requesting no further action for Incident Number NAPP2305455050.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit L, Section 27, Township 17 South, Range 32 East, in Lea County, New Mexico (32.805161° N, -103.760712° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On February 13, 2022, internal corrosion of a nipple on the wellhead caused the release of approximately 3.0 barrels (bbls) of crude oil and 12.6 barrels (bbls) of produced water onto the surface of the well pad and into the pasture area south of the pad. A vacuum truck was immediately dispatched to the site and recovered 2.5 barrels of free-standing fluid. Maverick reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on February 17, 2022. The release was assigned Incident Number NAPP2305455050.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on regional groundwater well data. The closest permitted groundwater well with depth to groundwater data is the New Mexico office of the State Engineer (NMOSE) well RA 12721 POD 5, located approximately 0.33 miles southwest of the site. The groundwater well has a reported depth to

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groundwater of 124 feet bgs. Ground surface elevation at the groundwater well location is 3,964 feet above mean sea level (amsl) which is 28 feet lower in elevation than the site.

The closest continuously flowing water or significant watercourse to the Site is a freshwater pond, located approximately 3,000 feet northeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

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

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

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH applies to the top 4 feet of the pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet of areas that will be reclaimed following remediation.

SITE ASSESSMENT AND SOIL SAMPLE ACTIVITIES

Maverick conducted an initial scrape of the saturated soil immediately after identifying the release. Between February 16, 2023, and May 17, 2023, Ensolum personnel were at the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Assessment soil samples SS01 through SS03, SS05, SS06, and SS10 through SS15 were collected from a depth of 0.5 feet bgs within the release extent to assess for the presence or absence of impacted soil resulting from the release; samples SS10 and SS11 were collected within the pasture release extent south of the pad. Assessment soil samples SS04 and SS07 through SS09 were collected around the release extent from a depth of 0.5 feet bgs to confirm the lateral extent of the release. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The release extent and soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

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

Laboratory analytical results for assessment samples SS01 through SS03, SS05, SS06 and SS10 through SS15, collected within the release extent, indicated all COC concentrations were compliant with the Site Closure Criteria, and assessment samples SS10 and SS11 were compliant with the reclamation requirements. Laboratory analytical results for assessment samples SS04 and SS07 through SS09, collected around the release extent, indicated all COC concentrations were compliant with the most

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stringent Table I Closure Criteria, and successfully defined the lateral extent of the release. However, vertical delineation activities were warranted to further confirm the absence of impacted soil.

Between March 31, 2023, and May 17, 2023, Ensolum personnel were at the Site to complete vertical delineation activities to further confirm the absence of impacted soil. Boreholes were advanced via hand auger to a depth of 1-foot bgs at the locations of assessment samples SS01 through SS15. One soil sample was collected from each borehole at a depth of 1-foot bgs (SS01A through SS15A). Soil from the boreholes was field screened for VOCs and chloride. Field screening results and observations for the boreholes were logged on lithologic soil sampling logs, which are included in Appendix B. The soil samples were collected, handled, and analyzed following the same procedures as described above. The soil sample locations are depicted on Figure 2. Photographic documentation was completed during the Site visits and a photographic log is included in Appendix C.

Laboratory analytical results for borehole assessment samples SS01A through SS15A indicated all COC concentrations were compliant with the Site Closure Criteria, and assessment samples SS10A and SS11A were compliant with the reclamation requirements. Additionally, the release was vertically delineated to the most stringent Table I Closure Criteria by soil samples SS04A, SS06A, and SS11A through SS15A. The laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

CLOSURE REQUEST

Site assessment activities were conducted to assess for the presence or absence of impacted soil resulting from the February 13, 2023, release of crude oil and produced water at the Site. Assessment soil samples were collected within and around the release extent from depths ranging from 0.5 feet to 1-foot bgs. Laboratory analytical results for the assessment soil samples indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirements, where applicable. Additionally, the release was laterally and vertically delineated to the most stringent Table I Closure Criteria.

Based on initial response efforts, depth to groundwater greater than 100 feet bgs, and soil sample laboratory analytical results compliant with the Site Closure Criteria, no further remediation was required. Maverick believes the remedial actions completed are protective of human health, the environment, and groundwater and respectfully requests closure for Incident Number NAPP2305455050. NMOCD notifications are provided in Appendix E and the final C-141 is attached as Appendix F.

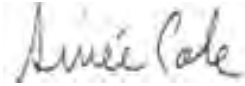
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If you have any questions or comments, please contact Ms. Kalei Jennings at (817) 683-2503 or kjennings@ensolum.com.

Sincerely,
Ensolum, LLC



Kalei Jennings
Senior Scientist



Aimee Cole
Senior Managing Scientist

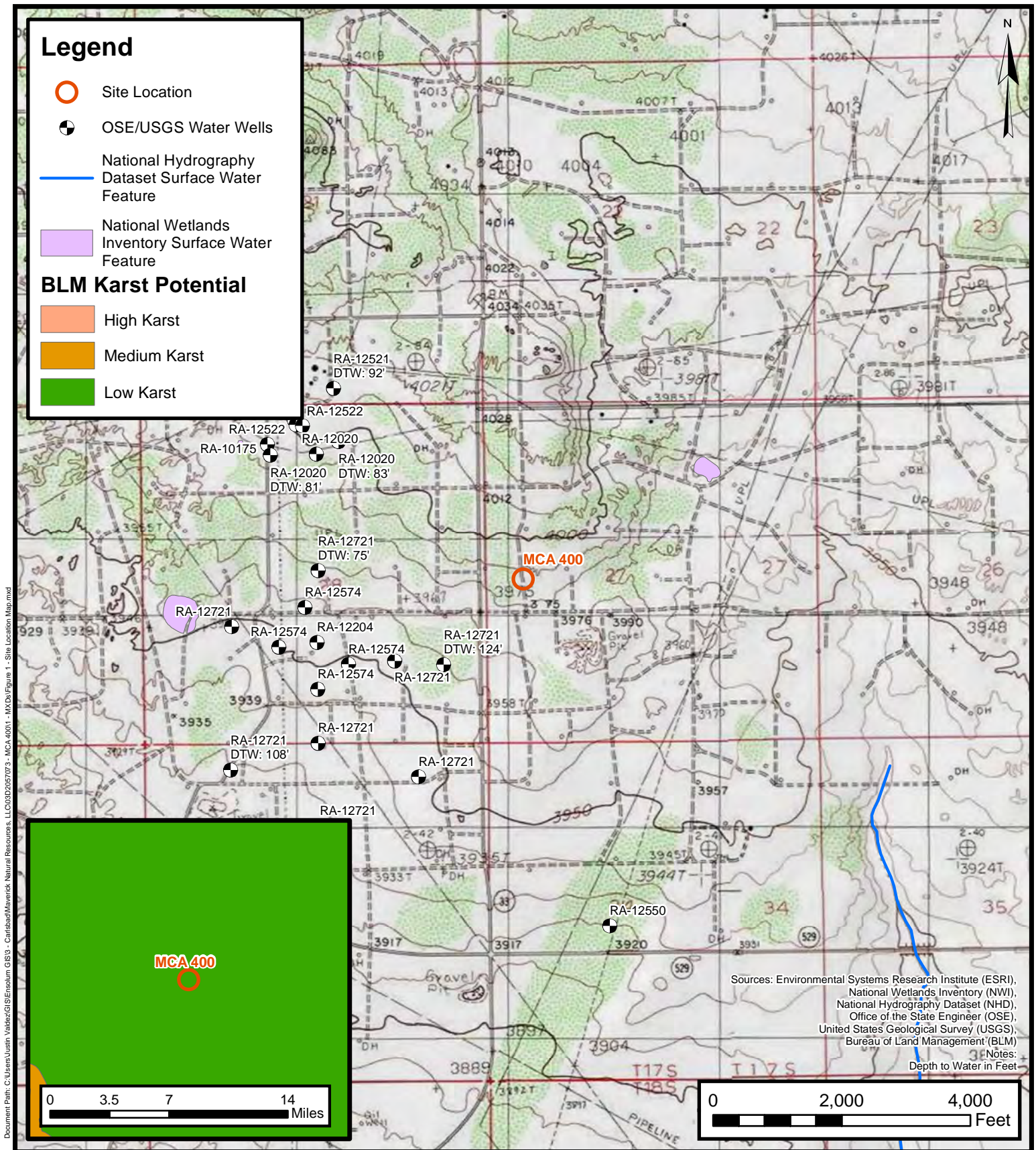
cc: Bryce Wagoner, Maverick Permian, LLC
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map
Figure 2	Assessment Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Lithologic / Soil Sampling Logs
Appendix C	Photographic Log
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Notifications
Appendix F	Final C-141



FIGURES



Site Location Map

Maverick Permian, LLC
MCA 400

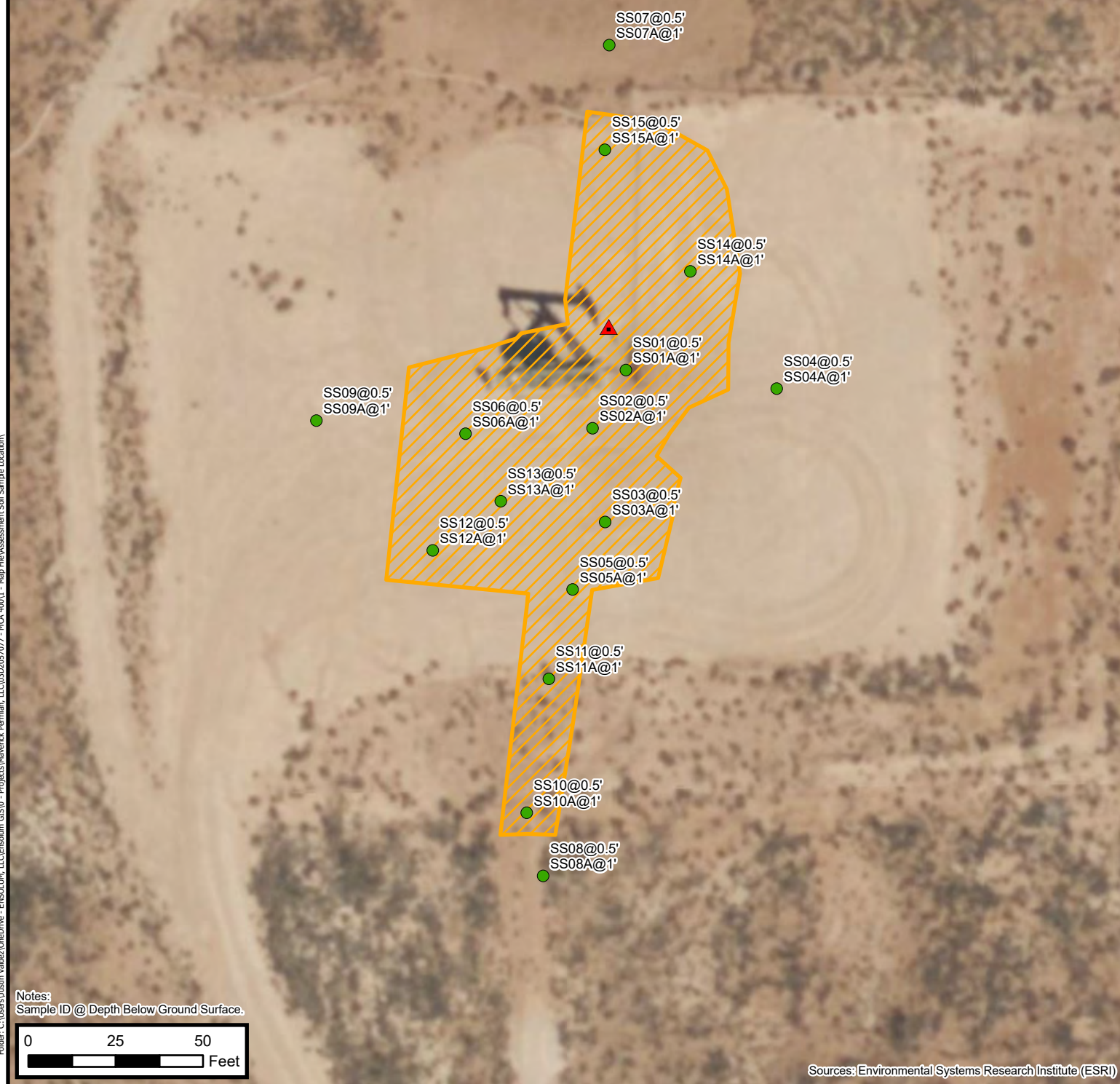
Unit L, Sec 27, T17S, R32E
Lea County, New Mexico
Incident Number: NAPP2305455050

FIGURE
1

ENSOLUM
Environmental, Engineering and
Hydrogeologic Consultants

Legend

- Delineation Soil Sample in Compliance with Closure Criteria
- ▲ Point of Release (POR)
- Release Extent

**Delineation Soil Sample Locations**

Maverick Permian, LLC

MCA 400

Incident Number: NAPP2305455050

Unit L, Section 27, Township 17 South, Range 32 East

Lea County, New Mexico

FIGURE**2**



TABLES



TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS MCA 400 Maverick Permian, LLC Lea County, New Mexico										
Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Assessment Soil Samples										
SS01	02/16/2023	0.5	<0.00198	<0.00397	<49.9	85.6	<49.9	85.6	85.6	7,680
SS01A	03/31/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	5,840
SS02	02/16/2023	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	7,270
SS02A	03/31/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	4,800
SS03	02/16/2023	0.5	0.153	0.153	<50.0	<50.0	<50.0	<50.0	<50.0	10,800
SS03A	03/31/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,000
SS04	03/17/2023	0.5	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	62.2
SS04A	03/31/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	352
SS05	02/16/2023	0.5	0.172	0.172	<49.8	<49.8	<49.8	<49.8	<49.8	8,460
SS05A	03/31/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,920
SS06	02/16/2023	0.5	<0.00200	<0.00399	275	448	<50.0	723	723	6,300
SS06A	03/31/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
SS07	02/16/2023	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	<4.97
SS07A	03/31/2023	1	<0.050	<0.0300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS08	02/16/2023	0.5	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	<49.8	<5.00
SS08A	03/31/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS09	02/16/2023	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	14.0
SS09A	03/31/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS10	05/17/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS10A	05/17/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS11	05/17/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
SS11A	05/17/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS12	05/17/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS12A	05/17/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS13	05/17/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	448
SS13A	05/17/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS14	05/17/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS14A	05/17/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS15	05/17/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,010
SS15A	05/17/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	480

Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
NMOCD: New Mexico Oil Conservation Division
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

TPH: Total Petroleum Hydrocarbon
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics

Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria




APPENDIX A

Referenced Well Records



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)				(quarters are smallest to largest)				(NAD83 UTM in meters)		
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y			
NA	RA 12721 POD5	2	4	4	28	17S	32E	615650	3629961			
x												
Driller License:		1456		Driller Company:			WHITE DRILLING COMPANY					
Driller Name:		WHITE, JOHNNOWN.GENER										
Drill Start Date:		04/27/2020		Drill Finish Date:			04/28/2020		Plug Date:			
Log File Date:		05/18/2020		PCW Rcv Date:						Source: Shallow		
Pump Type:					Pipe Discharge Size:						Estimated Yield:	
Casing Size:		2.00		Depth Well:			130 feet		Depth Water:		124 feet	
x												
Water Bearing Stratifications:				Top	Bottom	Description						
				109	121	Sandstone/Gravel/Conglomerate						
				121	125	Sandstone/Gravel/Conglomerate						
				125	130	Sandstone/Gravel/Conglomerate						
x												
Casing Perforations:				Top	Bottom							
				90	130							

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

3/13/23 4:07 PM

POINT OF DIVERSION SUMMARY



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

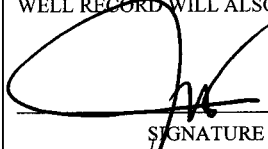
www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) MW-10 70DS		WELL TAG ID NO.		OSE FILE NO(S) RA-12721			
	WELL OWNER NAME(S) ConocoPhillips Company				PHONE (OPTIONAL) 432-258-3451			
	WELL OWNER MAILING ADDRESS 901 W Wall St, Suite 100				CITY Midland	STATE TX	ZIP 79701	
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 48	SECONDS 5.56 N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND			
		LONGITUDE 103	45	53.23 W	* DATUM REQUIRED: WGS 84			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE MCA 357								
2. DRILLING & CASING INFORMATION	LICENSE NO. WD-1456		NAME OF LICENSED DRILLER John W. White			NAME OF WELL DRILLING COMPANY White Drilling Company, Inc.		
	DRILLING STARTED 04/27/2020	DRILLING ENDED 04/28/2020	DEPTH OF COMPLETED WELL (FT) 130.0		BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT) 124.25		
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) 124.25		
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:							
	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	-2.7	90.0	6.0	Sch. 40 PVC	Threads	2.0	1/4"	
	90.0	130.0	6.0	Sch. 40 PVC	Threads	2.0	1/4"	.010
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						
	0.0	10.0	6.0	Type 2 Portland Cement w/5% Bentonite Grout	1.963	Pump Mix w/Tremie Pipe		
	10.0	87.0	6.0	Bentonite Chips	22 Bags	Hand Mix		
	87.0	130.0	6.0	20/40 Sand	16 Bags	Hand Mix		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

FILE NO. RA-12721	POD NO. 5	TRN NO. 670406
LOCATION 175.32E.28.442	WELL TAG ID NO. _____	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)
	FROM	TO				
	0.0	0.5	0.5	Caliche base	Y ✓ N	
	0.5	2.0	1.5	Brown sand/sandstone	Y ✓ N	
	2.0	3.0	1.0	Red/brown sand/sandstone	Y ✓ N	
	3.0	17.0	14.0	Caliche	Y ✓ N	
	17.0	28.0	11.0	Light brown sand/sandstone	Y ✓ N	
	28.0	37.0	9.0	Red/brown sand/sandstone	Y ✓ N	
	37.0	42.0	5.0	Light brown sand/sandstone	Y ✓ N	
	42.0	49.0	7.0	Red/brown silty sandstone	Y ✓ N	
	49.0	52.0	3.0	Gray sandstone	Y ✓ N	
	52.0	60.0	8.0	Purple, gray and light brown layers of sandstone	Y ✓ N	
	60.0	80.0	20.0	Purple/brown sandstone	Y ✓ N	
	80.0	98.0	18.0	Brown and tan sandstone	Y ✓ N	
	98.0	109.0	11.0	Light gray tan sandstone	Y ✓ N	
	109.0	121.0	12.0	Green and brown mixes sandstone	✓ Y N	
	121.0	125.0	4.0	Yellow, brown and gray silty sandstone	✓ Y N	
	125.0	130.0	5.0	Green brown silty sandstone	✓ Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:					TOTAL ESTIMATED WELL YIELD (gpm): 0.00	
<input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY:						
5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.				
	MISCELLANEOUS INFORMATION:					
	PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: William B. Atkins					
6. SIGNATURE	BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.					
	 SIGNATURE OF DRILLER / PRINT SIGNED NAME					05/11/2020 DATE

FOR OSE INTERNAL USE


WR-20 WELL RECORD & LOG (Version 04/30/2019)


FILE NO. RA-12721	POD NO. 5	TRN NO. 670406
LOCATION	WELL TAG ID NO.	PAGE 2 OF 2





APPENDIX B


Lithologic Soil Sampling Logs


								Sample Name: SS01		Date: 03/21/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger					
Coordinates: 32.805208, -103.760704								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
-	-	-	-	-	-	-	-								
Dry	6,725	1	N	SS01A	1	1	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							


								Sample Name: SS02		Date: 03/21/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger					
Coordinates: 32.805166, -103.760721								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
-	-	-	-	-	-	-	-								
Dry	5,728	1.6	N	SS01A	1	1	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							


								Sample Name: SS03		Date: 03/21/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger					
Coordinates: 32.805089, -103.760725								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
-	-	-	-	-	-	-	-								
Dry	2,279	1.3	N	SS03A	1	1	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							


								Sample Name: SS04		Date: 03/21/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger					
Coordinates: 32.80188, -103.760314								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
Dry	1,993	0.9	N	SS04	0.5	0.5	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
Dry	2,279	1.3	N	SS04A	1	1	SP-SM	SAA							
								TD reached @ 1' bgs							


								Sample Name: SS05		Date: 03/21/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger					
Coordinates: 32.80188, -103.760314								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
-	-	-	-	-	-	-	-								
Dry	3,438	3.6	N	SS05A	1	1	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							


								Sample Name: SS06		Date: 03/21/2023	
								Site Name: MCA 400			
								Incident Number: NAPP25305455050			
								Job Number: 03D2057073			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger	
Coordinates: 32.805160, -103.760854								Hole Diameter: 4"		Total Depth: 1'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
-	-	-	-	-	-	-	-				
Dry	375	2.1	N	SS06A	1	1	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.			
								TD reached @ 1' bgs			


								Sample Name: SS07		Date: 03/21/2023	
								Site Name: MCA 400			
								Incident Number: NAPP25305455050			
								Job Number: 03D2057073			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger	
Coordinates: 32.805183, -103.760561								Hole Diameter: 4"		Total Depth: 1'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
-	-	-	-	-	-	-	-				
Dry	<173	2.3	N	SS07A	1	1	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.			
								TD reached @ 1' bgs			


								Sample Name: SS08		Date: 03/21/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger					
Coordinates: 32.804791, -103.760691								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
-	-	-	-	-	-	-	-								
Dry	<173	1	N	SS08A	1	1	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							


								Sample Name: SS09		Date: 03/21/2023	
								Site Name: MCA 400			
								Incident Number: NAPP25305455050			
								Job Number: 03D2057073			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: P. VanPatten		Method: Hand Auger	
Coordinates: 32.804791, -103.760691								Hole Diameter: 4"		Total Depth: 1'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
-	-	-	-	-	-	-	-				
Dry	<173	1.7	N	SS09A	1	1	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.			
								TD reached @ 1' bgs			


								Sample Name: SS10		Date: 05/17/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: J.Falcomata		Method: Hand Auger					
Coordinates: 32.804861, -103.760801								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
Dry	<168	0.3	N	SS10	0.5	0.5	SP-SM	SAND: fine grained, poorly graded, tan - medium brown, no odor, non plastic, non cohesive.							
Dry	<168	0.1	N	SS10A	1	1	SP-SM	SAND: fine grained, poorly graded, medium brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							

								Sample Name: SS11		Date: 05/17/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: J.Falcomata		Method: Hand Auger					
Coordinates: 32.804923, -103.760801								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
Dry	184	0.1	N	SS11	0.5	0.5	SP-SM	SAND: fine grained, silty, poorly graded, light brown to medium brown, no odor, non plastic, non cohesive.							
Dry	<168	0.7	N	SS11A	1	1	SP-SM	SAND: fine grained, silty, poorly graded, medium brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							

								Sample Name: SS12		Date: 05/17/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: J.Falcomata		Method: Hand Auger					
Coordinates: 32.805043, -103.760915								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
Dry	<168	0.1	N	SS12	0.5	0.5	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
Dry	<168	0.4	N	SS12A	1	1	SP-SM	SAND: fine grained, slightly silty, poorly graded, light brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							

								Sample Name: SS13		Date: 05/17/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: J.Falcomata		Method: Hand Auger					
Coordinates: 32.805106, -103.760822								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
Dry	772	0.4	N	SS13	0.5	0.5	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
Dry	<168	0.1	N	SS13A	1	1	SP-SM	SAND: fine grained, slightly silty, poorly graded, light brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							

								Sample Name: SS14		Date: 05/17/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: J.Falcomata		Method: Hand Auger					
Coordinates: 32.805285, -103.760643								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
Dry	<168	0.2	N	SS14	0.5	0.5	SP-SM	SAND: fine grained to medium grained, trace amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
Dry	<168	0.1	N	SS14A	1	1	SP-SM	SAND: fine grained, slightly silty, poorly graded, light brown to medium, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							

								Sample Name: SS15		Date: 05/17/2023					
								Site Name: MCA 400							
								Incident Number: NAPP25305455050							
								Job Number: 03D2057073							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: J.Falcomata		Method: Hand Auger					
Coordinates: 32.805382, -103.760720								Hole Diameter: 4"		Total Depth: 1'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
Dry	1124	0.1	N	SS15	0.5	0.5	SP-SM	SAND: fine grained to medium grained, moderate amounts small gravel, poorly graded, tan to light brown, no odor, non plastic, non cohesive.							
Dry	420	0	N	SS15A	1	1	SP-SM	SAND: fine grained, slightly silty, poorly graded, trace amounts small gravel, light brown, no odor, non plastic, non cohesive.							
								TD reached @ 1' bgs							



APPENDIX C

Photographic Log



Photographic Log

Maverick Permian, LLC

MCA 400

Incident Number NAPP2305455050



Photograph 1

Date: 02/13/2023

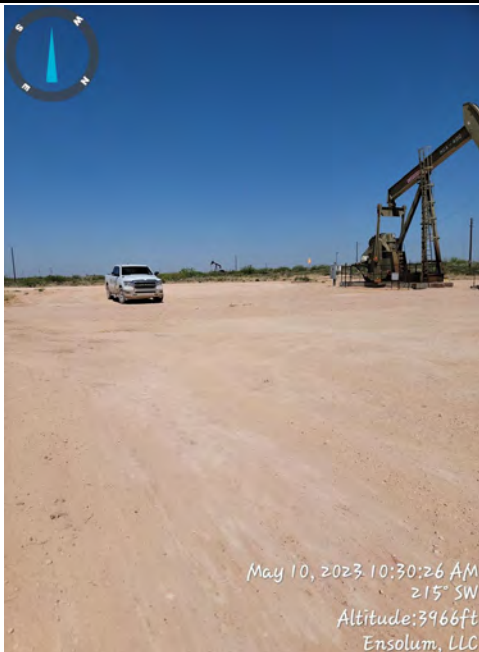
Description: Release point



Photograph 2

Date: 02/16/2023

Description: Release area after initial response scraping



Photograph 3

Date: 05/10/2023

Description: Release area



Photograph 4

Date: 05/17/2023

Description: Release area during delineation activities



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Josh Adams

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 2/23/2023 11:53:17 AM

JOB DESCRIPTION

MCA 400

SDG NUMBER 03D2057073

JOB NUMBER

890-4117-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/23/2023 11:53:17 AM

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

Client: Ensolum
Project/Site: MCA 400

Laboratory Job ID: 890-4117-1
SDG: 03D2057073

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Definitions/Glossary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*1	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
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: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

Job ID: 890-4117-1

Laboratory: Eurofins Carlsbad

Narrative	
	Job Narrative 890-4117-1

Receipt

The sample was received on 2/16/2023 3:24 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.0°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS09 (890-4117-1).

GC VOA

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

GC Semi VOA

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-46823 and analytical batch 880-46829 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

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.

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Client Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

Client Sample ID: SS09

Lab Sample ID: 890-4117-1

Date Collected: 02/16/23 11:30

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		02/22/23 09:33	02/23/23 07:23	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/22/23 09:33	02/23/23 07:23	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/22/23 09:33	02/23/23 07:23	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/22/23 09:33	02/23/23 07:23	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/22/23 09:33	02/23/23 07:23	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/22/23 09:33	02/23/23 07:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130	02/22/23 09:33	02/23/23 07:23	1
1,4-Difluorobenzene (Surr)	110		70 - 130	02/22/23 09:33	02/23/23 07:23	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			02/23/23 12:22	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			02/22/23 16:01	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/21/23 12:10	02/21/23 18:27	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		02/21/23 12:10	02/21/23 18:27	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/21/23 12:10	02/21/23 18:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130	02/21/23 12:10	02/21/23 18:27	1
o-Terphenyl	97		70 - 130	02/21/23 12:10	02/21/23 18:27	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14.0		4.99	mg/Kg			02/21/23 16:43	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-24905-A-79-D MS	Matrix Spike	111	112
880-24905-A-79-E MSD	Matrix Spike Duplicate	119	113
890-4117-1	SS09	121	110
LCS 880-46933/1-A	Lab Control Sample	110	113
LCSD 880-46933/2-A	Lab Control Sample Dup	109	113
MB 880-46926/8	Method Blank	105	105
MB 880-46933/5-A	Method Blank	105	104
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-24982-A-1-B MS	Matrix Spike	117	106
880-24982-A-1-C MSD	Matrix Spike Duplicate	120	109
890-4117-1	SS09	103	97
LCS 880-46823/2-A	Lab Control Sample	127	129
LCSD 880-46823/3-A	Lab Control Sample Dup	114	108
MB 880-46823/1-A	Method Blank	104	108
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46926/8

Matrix: Solid

Analysis Batch: 46926

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg			02/22/23 13:39	1
Toluene	<0.00200	U	0.00200	mg/Kg			02/22/23 13:39	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			02/22/23 13:39	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			02/22/23 13:39	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			02/22/23 13:39	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			02/22/23 13:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130		02/22/23 13:39	1
1,4-Difluorobenzene (Surr)	105		70 - 130		02/22/23 13:39	1

Lab Sample ID: MB 880-46933/5-A

Matrix: Solid

Analysis Batch: 46926

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46933

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:33	02/23/23 01:41	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:33	02/23/23 01:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:33	02/23/23 01:41	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/22/23 09:33	02/23/23 01:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:33	02/23/23 01:41	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/22/23 09:33	02/23/23 01:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	02/22/23 09:33	02/23/23 01:41	1
1,4-Difluorobenzene (Surr)	104		70 - 130	02/22/23 09:33	02/23/23 01:41	1

Lab Sample ID: LCS 880-46933/1-A

Matrix: Solid

Analysis Batch: 46926

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46933

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1029		mg/Kg		103	70 - 130
Toluene	0.100	0.09799		mg/Kg		98	70 - 130
Ethylbenzene	0.100	0.1052		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2284		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1113		mg/Kg		111	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: LCSD 880-46933/2-A

Matrix: Solid

Analysis Batch: 46926

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46933

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.1044		mg/Kg		104	70 - 130	1	35

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

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

Lab Sample ID: LCSD 880-46933/2-A

Matrix: Solid

Analysis Batch: 46926

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46933

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1007		mg/Kg		101	70 - 130	3	35
Ethylbenzene	0.100	0.1051		mg/Kg		105	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2261		mg/Kg		113	70 - 130	1	35
o-Xylene	0.100	0.1105		mg/Kg		110	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 880-24905-A-79-D MS

Matrix: Solid

Analysis Batch: 46926

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46933

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.101	0.1098		mg/Kg		109	70 - 130
Toluene	<0.00200	U	0.101	0.1066		mg/Kg		106	70 - 130
Ethylbenzene	<0.00200	U	0.101	0.1125		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.202	0.2429		mg/Kg		120	70 - 130
o-Xylene	<0.00200	U	0.101	0.1187		mg/Kg		117	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: 880-24905-A-79-E MSD

Matrix: Solid

Analysis Batch: 46926

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46933

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0994	0.1097		mg/Kg		110	70 - 130	0	35
Toluene	<0.00200	U	0.0994	0.1076		mg/Kg		108	70 - 130	1	35
Ethylbenzene	<0.00200	U	0.0994	0.1143		mg/Kg		115	70 - 130	2	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.2473		mg/Kg		124	70 - 130	2	35
o-Xylene	<0.00200	U	0.0994	0.1213		mg/Kg		122	70 - 130	2	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

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

Lab Sample ID: MB 880-46823/1-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46823

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

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

Lab Sample ID: MB 880-46823/1-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46823

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130			02/21/23 08:38	02/21/23 08:17	1
o-Terphenyl	108		70 - 130			02/21/23 08:38	02/21/23 08:17	1

Lab Sample ID: LCS 880-46823/2-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1049		mg/Kg		105	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1212		mg/Kg		121	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	127		70 - 130				
o-Terphenyl	129		70 - 130				

Lab Sample ID: LCSD 880-46823/3-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	857.5		mg/Kg		86	70 - 130	20	20
Diesel Range Organics (Over C10-C28)	1000	955.2	*1	mg/Kg		96	70 - 130	24	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	114		70 - 130						
o-Terphenyl	108		70 - 130						

Lab Sample ID: 880-24982-A-1-B MS

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	1193		mg/Kg		117	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U *1	997	1034		mg/Kg		102	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	117		70 - 130						
o-Terphenyl	106		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

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

Lab Sample ID: 880-24982-A-1-C MSD

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	987.5		mg/Kg		97	70 - 130	19	20
Diesel Range Organics (Over C10-C28)	<49.9	U *1	998	1068		mg/Kg		105	70 - 130	3	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	120		70 - 130								
o-Terphenyl	109		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46828/1-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/21/23 15:17	1

Lab Sample ID: LCS 880-46828/2-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	236.5		mg/Kg		95	90 - 110

Lab Sample ID: LCSD 880-46828/3-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	243.9		mg/Kg		98	90 - 110	3	20

Lab Sample ID: 890-4116-A-1-B MS

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	132		251	370.5		mg/Kg		95	90 - 110

Lab Sample ID: 890-4116-A-1-C MSD

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	132		251	371.3		mg/Kg		95	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

GC VOA

Analysis Batch: 46926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4117-1	SS09	Total/NA	Solid	8021B	46933
MB 880-46926/8	Method Blank	Total/NA	Solid	8021B	
MB 880-46933/5-A	Method Blank	Total/NA	Solid	8021B	46933
LCS 880-46933/1-A	Lab Control Sample	Total/NA	Solid	8021B	46933
LCSD 880-46933/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46933
880-24905-A-79-D MS	Matrix Spike	Total/NA	Solid	8021B	46933
880-24905-A-79-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	46933

Prep Batch: 46933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4117-1	SS09	Total/NA	Solid	5035	
MB 880-46933/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46933/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46933/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-24905-A-79-D MS	Matrix Spike	Total/NA	Solid	5035	
880-24905-A-79-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4117-1	SS09	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 46823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4117-1	SS09	Total/NA	Solid	8015NM Prep	
MB 880-46823/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-46823/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-46823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-24982-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-24982-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 46829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4117-1	SS09	Total/NA	Solid	8015B NM	46823
MB 880-46823/1-A	Method Blank	Total/NA	Solid	8015B NM	46823
LCS 880-46823/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	46823
LCSD 880-46823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	46823
880-24982-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	46823
880-24982-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	46823

Analysis Batch: 46963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4117-1	SS09	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 46828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4117-1	SS09	Soluble	Solid	DI Leach	
MB 880-46828/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

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QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

HPLC/IC (Continued)

Leach Batch: 46828 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4116-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4116-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 46871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4117-1	SS09	Soluble	Solid	300.0	46828
MB 880-46828/1-A	Method Blank	Soluble	Solid	300.0	46828
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	300.0	46828
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46828
890-4116-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	46828
890-4116-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	46828

Lab Chronicle

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

Client Sample ID: SS09
Date Collected: 02/16/23 11:30
Date Received: 02/16/23 15:24

Lab Sample ID: 890-4117-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	46933	02/22/23 09:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46926	02/23/23 07:23	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			47053	02/23/23 12:22	AJ	EET MID
Total/NA	Analysis	8015 NM		1			46963	02/22/23 16:01	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	46823	02/21/23 12:10	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46829	02/21/23 18:27	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		1			46871	02/21/23 16:43	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: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

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	EPA	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
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4117-1
SDG: 03D2057073

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4117-1	SS09	Solid	02/16/23 11:30	02/16/23 15:24	0.5'

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4117-1

SDG Number: 03D2057073

Login Number: 4117

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4117-1

SDG Number: 03D2057073

Login Number: 4117

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 02/21/23 08:18 AM

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



Environment Testing

1

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ANALYTICAL REPORT

PREPARED FOR

Attn: Josh Adams

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 2/23/2023 11:48:32 AM

JOB DESCRIPTION

MCA 400

SDG NUMBER 03D2057073

JOB NUMBER

890-4118-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/23/2023 11:48:32 AM

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

Client: Ensolum
Project/Site: MCA 400

Laboratory Job ID: 890-4118-1
SDG: 03D2057073

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Definitions/Glossary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	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.
α	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: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

Job ID: 890-4118-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-4118-1****Receipt**

The sample was received on 2/16/2023 3:24 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.0°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS08 (890-4118-1).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-46929 and analytical batch 880-46928 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is 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 880-46823 and analytical batch 880-46829 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

Client Sample ID: SS08

Lab Sample ID: 890-4118-1

Date Collected: 02/16/23 11:20

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		02/22/23 09:16	02/23/23 07:42	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/22/23 09:16	02/23/23 07:42	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/22/23 09:16	02/23/23 07:42	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		02/22/23 09:16	02/23/23 07:42	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/22/23 09:16	02/23/23 07:42	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		02/22/23 09:16	02/23/23 07:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	127		70 - 130	02/22/23 09:16	02/23/23 07:42	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/22/23 09:16	02/23/23 07:42	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			02/22/23 16:01	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		02/21/23 12:10	02/21/23 18:49	1
Diesel Range Organics (Over C10-C28)	<49.8	U *1	49.8	mg/Kg		02/21/23 12:10	02/21/23 18:49	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		02/21/23 12:10	02/21/23 18:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130	02/21/23 12:10	02/21/23 18:49	1
o-Terphenyl	87		70 - 130	02/21/23 12:10	02/21/23 18:49	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/21/23 16:49	1

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Surrogate Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-4118-1	SS08	127	99
890-4123-A-1-B MS	Matrix Spike	82	85
890-4123-A-1-C MSD	Matrix Spike Duplicate	100	108
LCS 880-46929/1-A	Lab Control Sample	92	107
LCSD 880-46929/2-A	Lab Control Sample Dup	103	110
MB 880-46868/5-A	Method Blank	82	104
MB 880-46929/5-A	Method Blank	85	99
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-24982-A-1-B MS	Matrix Spike	117	106
880-24982-A-1-C MSD	Matrix Spike Duplicate	120	109
890-4118-1	SS08	88	87
LCS 880-46823/2-A	Lab Control Sample	127	129
LCSD 880-46823/3-A	Lab Control Sample Dup	114	108
MB 880-46823/1-A	Method Blank	104	108
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46868/5-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46868

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/21/23 14:34	02/22/23 11:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130	02/21/23 14:34	02/22/23 11:49	1
1,4-Difluorobenzene (Surr)	104		70 - 130	02/21/23 14:34	02/22/23 11:49	1

Lab Sample ID: MB 880-46929/5-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46929

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/22/23 09:16	02/23/23 02:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	02/22/23 09:16	02/23/23 02:51	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/22/23 09:16	02/23/23 02:51	1

Lab Sample ID: LCS 880-46929/1-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1023		mg/Kg		102	70 - 130
Toluene	0.100	0.1011		mg/Kg		101	70 - 130
Ethylbenzene	0.100	0.09373		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1915		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09836		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: LCSD 880-46929/2-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1102		mg/Kg		110	70 - 130	7	35

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

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

Lab Sample ID: LCSD 880-46929/2-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1089		mg/Kg		109	70 - 130	7	35
Ethylbenzene	0.100	0.1027		mg/Kg		103	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.2128		mg/Kg		106	70 - 130	11	35
o-Xylene	0.100	0.1094		mg/Kg		109	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: 890-4123-A-1-B MS

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F2 F1	0.101	0.04951	F1	mg/Kg		49	70 - 130
Toluene	0.00490	F1	0.101	0.07116	F1	mg/Kg		66	70 - 130
Ethylbenzene	0.00362		0.101	0.07403		mg/Kg		70	70 - 130
m-Xylene & p-Xylene	0.00658	F1	0.202	0.1234	F1	mg/Kg		58	70 - 130
o-Xylene	0.00316	F1	0.101	0.06386	F1	mg/Kg		60	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	82		70 - 130
1,4-Difluorobenzene (Surr)	85		70 - 130

Lab Sample ID: 890-4123-A-1-C MSD

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F2 F1	0.0992	0.09288	F2	mg/Kg		93	70 - 130	61	35
Toluene	0.00490	F1	0.0992	0.09288		mg/Kg		89	70 - 130	26	35
Ethylbenzene	0.00362		0.0992	0.08391		mg/Kg		81	70 - 130	13	35
m-Xylene & p-Xylene	0.00658	F1	0.198	0.1714		mg/Kg		83	70 - 130	33	35
o-Xylene	0.00316	F1	0.0992	0.08869		mg/Kg		86	70 - 130	33	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

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

Lab Sample ID: MB 880-46823/1-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46823

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

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

Lab Sample ID: MB 880-46823/1-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46823

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130			02/21/23 08:38	02/21/23 08:17	1
o-Terphenyl	108		70 - 130			02/21/23 08:38	02/21/23 08:17	1

Lab Sample ID: LCS 880-46823/2-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1049		mg/Kg		105	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1212		mg/Kg		121	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	127		70 - 130				
o-Terphenyl	129		70 - 130				

Lab Sample ID: LCSD 880-46823/3-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	857.5		mg/Kg		86	70 - 130	20	20
Diesel Range Organics (Over C10-C28)	1000	955.2	*1	mg/Kg		96	70 - 130	24	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	114		70 - 130						
o-Terphenyl	108		70 - 130						

Lab Sample ID: 880-24982-A-1-B MS

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	1193		mg/Kg		117	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U *1	997	1034		mg/Kg		102	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	117		70 - 130						
o-Terphenyl	106		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

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

Lab Sample ID: 880-24982-A-1-C MSD

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	987.5		mg/Kg		97	70 - 130	19	20
Diesel Range Organics (Over C10-C28)	<49.9	U *1	998	1068		mg/Kg		105	70 - 130	3	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	120		70 - 130								
o-Terphenyl	109		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46828/1-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/21/23 15:17	1

Lab Sample ID: LCS 880-46828/2-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	236.5		mg/Kg		95	90 - 110

Lab Sample ID: LCSD 880-46828/3-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	243.9		mg/Kg		98	90 - 110	3	20

Lab Sample ID: 890-4116-A-1-B MS

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	132		251	370.5		mg/Kg		95	90 - 110

Lab Sample ID: 890-4116-A-1-C MSD

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	132		251	371.3		mg/Kg		95	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

GC VOA

Prep Batch: 46868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-46868/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 46928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4118-1	SS08	Total/NA	Solid	8021B	46929
MB 880-46868/5-A	Method Blank	Total/NA	Solid	8021B	46868
MB 880-46929/5-A	Method Blank	Total/NA	Solid	8021B	46929
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	8021B	46929
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46929
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	46929
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	46929

Prep Batch: 46929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4118-1	SS08	Total/NA	Solid	5035	
MB 880-46929/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4118-1	SS08	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 46823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4118-1	SS08	Total/NA	Solid	8015NM Prep	
MB 880-46823/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-46823/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-46823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-24982-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-24982-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 46829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4118-1	SS08	Total/NA	Solid	8015B NM	46823
MB 880-46823/1-A	Method Blank	Total/NA	Solid	8015B NM	46823
LCS 880-46823/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	46823
LCSD 880-46823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	46823
880-24982-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	46823
880-24982-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	46823

Analysis Batch: 46964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4118-1	SS08	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

HPLC/IC

Leach Batch: 46828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4118-1	SS08	Soluble	Solid	DI Leach	
MB 880-46828/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4116-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4116-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 46871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4118-1	SS08	Soluble	Solid	300.0	46828
MB 880-46828/1-A	Method Blank	Soluble	Solid	300.0	46828
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	300.0	46828
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46828
890-4116-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	46828
890-4116-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	46828

Lab Chronicle

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

Client Sample ID: SS08
Date Collected: 02/16/23 11:20
Date Received: 02/16/23 15:24

Lab Sample ID: 890-4118-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 07:42	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47044	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			46964	02/22/23 16:01	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	46823	02/21/23 12:10	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46829	02/21/23 18:49	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		1			46871	02/21/23 16:49	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: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

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	EPA	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

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4118-1
SDG: 03D2057073

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4118-1	SS08	Solid	02/16/23 11:20	02/16/23 15:24	0.5'

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Environment Testing
Xenco

Chain of Custody


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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Josh Adams	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marienfeld St Suite 400	Address:	601 N Marienfeld St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:	303-517-8437	Email:	jadams@ensolum.com, kjennings@ensolum.com

Work Order Comments	
Program:	UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:	
Reporting:	Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other:

Project Name:		Turn Around		ANALYSIS REQUEST										Preservative Codes			
Project Number:	MCA 400	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush		Pres. Code											None: NO	DI Water: H ₂ O	
Project Location:	03D2057073	Due Date:		Parameters	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)		890-4118 Chain of Custody						Cool: Cool	MeOH: Me	
Sampler's Name:	Lea County, NM	TAT starts the day received by the lab, if received by 4:30pm													HCL: HC	HNO ₃ : HN	
PO #:	Dmitry Nikanorov														H ₂ SO ₄ : H ₂	NaOH: Na	
SAMPLE RECEIPT		Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														
Samples Received Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID:	TAM-202														
Cooler Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Correction Factor:	2.2												NaHSO ₄ : NABIS		
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Temperature Reading:	4.2												Na ₂ S ₂ O ₃ : NaSO ₃		
Total Containers:		Corrected Temperature:	4.0												Zn Acetate+NaOH: Zn		
															NaOH+Ascorbic Acid: SAPC		
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont										Sample Comments	
SS08	S	2/16/2023	11:20	0.5'	Grab	1	x	x	x								
<div style="position: relative; width: 100%; height: 100%;"> DN </div>																	

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010: 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>DN</i>	<i>Aracela I. I...</i>	2-16-23 15:24			
3					
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4118-1

SDG Number: 03D2057073

Login Number: 4118

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4118-1

SDG Number: 03D2057073

Login Number: 4118

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 02/21/23 08:18 AM

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



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 11, 2023

KALEI JENNINGS

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: MCA 400

Enclosed are the results of analyses for samples received by the laboratory on 04/05/23 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 04 0.5' (H231591-01)

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/07/2023	ND	2.02	101	2.00	1.46	
Toluene*	<0.050	0.050	04/07/2023	ND	2.00	100	2.00	1.21	
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.04	102	2.00	1.15	
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.16	103	6.00	0.726	
Total BTEx	<0.300	0.300	04/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1650	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 87.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.3 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 04A 1.0' (H231591-02)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/07/2023	ND	2.02	101	2.00	1.46		
Toluene*	<0.050	0.050	04/07/2023	ND	2.00	100	2.00	1.21		
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.04	102	2.00	1.15		
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.16	103	6.00	0.726		
Total BTEX	<0.300	0.300	04/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 86.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.4 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 07A 1.0' (H231591-03)

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2023	ND	2.14	107	2.00	6.73		
Toluene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.51		
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.12	106	2.00	8.03		
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.63	111	6.00	8.73		
Total BTEX	<0.300	0.300	04/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 85.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 08A 1.0' (H231591-04)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/07/2023	ND	2.14	107	2.00	6.73		
Toluene*	<0.050	0.050	04/07/2023	ND	2.17	108	2.00	6.51		
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.12	106	2.00	8.03		
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.63	111	6.00	8.73		
Total BTEx	<0.300	0.300	04/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 88.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 09A 1.0' (H231591-05)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/07/2023	ND	2.14	107	2.00	6.73		
Toluene*	<0.050	0.050	04/07/2023	ND	2.17	108	2.00	6.51		
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.12	106	2.00	8.03		
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.63	111	6.00	8.73		
Total BTEX	<0.300	0.300	04/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 89.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.9 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 01A 1.0' (H231591-06)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/07/2023	ND	2.14	107	2.00	6.73		
Toluene*	<0.050	0.050	04/07/2023	ND	2.17	108	2.00	6.51		
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.12	106	2.00	8.03		
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.63	111	6.00	8.73		
Total BTEX	<0.300	0.300	04/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5840	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 86.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 02A 1.0' (H231591-07)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/07/2023	ND	2.14	107	2.00	6.73		
Toluene*	<0.050	0.050	04/07/2023	ND	2.17	108	2.00	6.51		
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.12	106	2.00	8.03		
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.63	111	6.00	8.73		
Total BTEX	<0.300	0.300	04/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4800	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 90.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 03A 1.0' (H231591-08)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/07/2023	ND	2.14	107	2.00	6.73		
Toluene*	<0.050	0.050	04/07/2023	ND	2.17	108	2.00	6.51		
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.12	106	2.00	8.03		
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.63	111	6.00	8.73		
Total BTEx	<0.300	0.300	04/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2000	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 90.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 05A 1.0' (H231591-09)

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/07/2023	ND	2.14	107	2.00	6.73		
Toluene*	<0.050	0.050	04/07/2023	ND	2.17	108	2.00	6.51		
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.12	106	2.00	8.03		
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.63	111	6.00	8.73		
Total BTX	<0.300	0.300	04/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1920	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 78.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
KALEI JENNINGS
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received: 04/05/2023
Reported: 04/11/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: 32.805161,-103.760712

Sampling Date: 03/31/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 06A 1.0' (H231591-10)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/07/2023	ND	2.14	107	2.00	6.73		
Toluene*	<0.050	0.050	04/07/2023	ND	2.17	108	2.00	6.51		
Ethylbenzene*	<0.050	0.050	04/07/2023	ND	2.12	106	2.00	8.03		
Total Xylenes*	<0.150	0.150	04/07/2023	ND	6.63	111	6.00	8.73		
Total BTEx	<0.300	0.300	04/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	04/06/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2023	ND	179	89.5	200	3.01	
DRO >C10-C28*	<10.0	10.0	04/08/2023	ND	167	83.3	200	7.34	
EXT DRO >C28-C36	<10.0	10.0	04/08/2023	ND					

Surrogate: 1-Chlorooctane 74.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com




101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: 		Date: 4/5/23		Received By: 		Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:	
Time: 1400		Time:				All Results are emailed. Please provide Email address:	
Relinquished By:		Date:		Received By:		kjennings@ensolum.com	
Time:						REMARKS:	
Delivered By: (Circle One)		Observed Temp. °C 1.42		Sample Condition Cool Intact		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Sampler - UPS - Bus - Other:		Corrected Temp. °C 0.82		CHECKED BY: (Initials) 		Bacteria (only) Sample Condition Cool Intact Observed Temp. °C	
						Thermometer ID #113 Correction Factor -0.5°C	
						<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C	

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 23, 2023

KALEI JENNINGS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MCA 400

Enclosed are the results of analyses for samples received by the laboratory on 05/18/23 12:41.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 10 .5 (H232525-01)

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84	
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19	
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70	
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03	
Total BTX	<0.300	0.300	05/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/19/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/21/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/21/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/21/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 10 A 1 (H232525-02)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84	
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19	
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70	
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03	
Total BTEx	<0.300	0.300	05/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/19/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/21/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/21/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/21/2023	ND					

Surrogate: 1-Chlorooctane 130 % 48.2-134

Surrogate: 1-Chlorooctadecane 143 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 11 .5 (H232525-03)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84	
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19	
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70	
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03	
Total BTEX	<0.300	0.300	05/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/19/2023	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/22/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/22/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/22/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 11 A 1 (H232525-04)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84		
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19		
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70		
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03		
Total BTEx	<0.300	0.300	05/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	05/19/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/21/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/21/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/21/2023	ND					

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 144 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 12 .5 (H232525-05)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84		
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19		
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70		
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03		
Total BTEx	<0.300	0.300	05/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	05/19/2023	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/22/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/22/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/22/2023	ND					

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 12 A 1 (H232525-06)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84		
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19		
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70		
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03		
Total BTEx	<0.300	0.300	05/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/19/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/19/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/19/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/19/2023	ND					

Surrogate: 1-Chlorooctane 133 % 48.2-134

Surrogate: 1-Chlorooctadecane 148 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 13 .5 (H232525-07)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84		
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19		
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70		
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03		
Total BTEx	<0.300	0.300	05/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	05/19/2023	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/19/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/19/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/19/2023	ND					

Surrogate: 1-Chlorooctane 120 % 48.2-134

Surrogate: 1-Chlorooctadecane 135 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	05/18/2023	Sampling Date:	05/17/2023
Reported:	05/23/2023	Sampling Type:	Soil
Project Name:	MCA 400	Sampling Condition:	Cool & Intact
Project Number:	03D2057073	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.805161,-103.760712		

Sample ID: SS 13 A 1 (H232525-08)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84		
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19		
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70		
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03		
Total BTEx	<0.300	0.300	05/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	05/19/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/19/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/19/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/19/2023	ND					

Surrogate: 1-Chlorooctane 128 % 48.2-134

Surrogate: 1-Chlorooctadecane 144 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 14 .5 (H232525-09)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84		
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19		
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70		
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03		
Total BTEx	<0.300	0.300	05/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/19/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/19/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/19/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/19/2023	ND					

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 141 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 14 A 1 (H232525-10)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84	
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19	
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70	
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03	
Total BTEx	<0.300	0.300	05/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/19/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/19/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/19/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/19/2023	ND					

Surrogate: 1-Chlorooctane 126 % 48.2-134

Surrogate: 1-Chlorooctadecane 141 % 49.1-148

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Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 15 .5 (H232525-11)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84		
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19		
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70		
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03		
Total BTEx	<0.300	0.300	05/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1010	16.0	05/19/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/22/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/22/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/22/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
KALEI JENNINGS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/18/2023
Reported: 05/23/2023
Project Name: MCA 400
Project Number: 03D2057073
Project Location: MAVERICK 32.805161,-103.760712

Sampling Date: 05/17/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 15 A 1 (H232525-12)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/20/2023	ND	2.29	115	2.00	3.84	
Toluene*	<0.050	0.050	05/20/2023	ND	2.27	113	2.00	4.19	
Ethylbenzene*	<0.050	0.050	05/20/2023	ND	2.35	118	2.00	5.70	
Total Xylenes*	<0.150	0.150	05/20/2023	ND	6.89	115	6.00	6.03	
Total BTEx	<0.300	0.300	05/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	05/19/2023	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/21/2023	ND	177	88.3	200	3.74	
DRO >C10-C28*	<10.0	10.0	05/21/2023	ND	188	94.2	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	05/21/2023	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 128 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC				BILL TO				ANALYSIS REQUEST											
Project Manager: <i>halei jennings</i>				P.O. #: <i>a.a.</i>															
Address: <i>3122 Nat'l Parks Hwy</i>				Company:															
City: <i>Carrizobad</i> State: <i>NM</i> Zip: <i>88220</i>				Attn:															
Phone #: <i>505 240 7814</i> Fax #:				Address:															
Project #: <i>06D2057073</i> Project Owner: <i>Maverick</i>				City:															
Project Name: <i>MOA 400</i>				State: Zip:															
Project Location: <i>32.805161, -103.760712</i>				Phone #:															
Sampler Name: <i>Juliana Falcomata</i>				Fax #:															
FOR LAB USE ONLY																			
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	<i>BTEX</i> <i>TPX</i> <i>Chlorides</i>			
<i>H232525</i>	<i>SS10</i>	<i>.5</i>	<i>G</i>	<i>1</i>			<i>X</i>					<i>X</i>		<i>5/17/23</i>	<i>0930</i>				
<i>1</i>	<i>SS10A</i>	<i>1</i>													<i>0935</i>				
<i>2</i>	<i>SS11</i>	<i>.5</i>													<i>0940</i>				
<i>3</i>	<i>SS11A</i>	<i>1</i>													<i>0945</i>				
<i>4</i>	<i>SS12</i>	<i>.5</i>													<i>0950</i>				
<i>5</i>	<i>SS12A</i>	<i>1</i>													<i>0955</i>				
<i>6</i>	<i>SS13</i>	<i>.5</i>													<i>1000</i>				
<i>7</i>	<i>SS13A</i>	<i>1</i>													<i>1005</i>				
<i>8</i>	<i>SS14</i>	<i>.5</i>													<i>1010</i>				
<i>9</i>	<i>SS14A</i>	<i>1</i>													<i>1015</i>				

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Relinquished By: <i>[Signature]</i>	Date: <i>5/18/23</i> Time: <i>1241</i>	Received By: <i>[Signature]</i>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date:	Received By:	All Results are emailed. Please provide Email address: <i>hjenings@ensolum.com jfalcomata@ensolum.com</i>
Time:			REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C: <i>2.4</i> Corrected Temp. °C: <i>1.8</i>	Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID #113 Correction Factor -0.5°C
		CHECKED BY: (Initials) <i>SK</i>	Bacteria (only) Sample Condition Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
			Observed Temp. °C Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC				BILL TO				ANALYSIS REQUEST											
Project Manager: <i>Maverick Jennings</i>				P.O. #: <i>A.A.</i>				<div style="display: flex; justify-content: space-around; font-size: 2em;"> BTEX TPH Chlorides </div>											
Address: <i>3122 North Parks Hwy</i>				Company:															
City: <i>Carlsbad</i> State: <i>NM</i> Zip: <i>88220</i>				Attn:															
Phone #: <i>505 685 2503</i> Fax #:				Address:															
Project #: <i>03D257073</i> Project Owner: <i>Maverick</i>				City:															
Project Name: <i>MOA400</i>				State: Zip:															
Project Location: <i>32805161 - 103 7607R</i>				Phone #:															
Sampler Name: <i>Jelennan Falconmata</i>				Fax #:															
FOR LAB USE ONLY				MATRIX				PRESERV.				SAMPLING							
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME				
<i>H232525</i>	<i>SSIS</i>	<i>5</i>	<i>A</i>	<i>1</i>			<i>X</i>				<i>X</i>			<i>5/17/23</i>	<i>1020</i>				
<i>11</i>	<i>SSISA</i>	<i>1</i>	<i>A</i>	<i>1</i>			<i>X</i>				<i>X</i>			<i>5/17/23</i>	<i>1025</i>				

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Relinquished By: <i>Jelennan Falconmata</i>		Date: <i>5/18/23</i>	Received By: <i>S Rodriguez</i>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Relinquished By: <i>Jelennan Falconmata</i>		Date: <i>5/18/23</i>	Received By: <i>S Rodriguez</i>	All Results are emailed. Please provide Email address: <i>jennings@ensolum.com jfalconmata@ensolum.com</i>	
Time: <i>2:41</i>		Time: <i>2:41</i>		REMARKS:	
Delivered By: (Circle One)		Observed Temp. °C: <i>24.2</i>	Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials) <i>SK</i>	Turnaround Time: Standard <input type="checkbox"/> Rush <input checked="" type="checkbox"/>
Sampler - UPS - Bus - Other:		Corrected Temp. °C: <i>18.2</i>			Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
					Thermometer ID #113 Correction Factor -0.5°C

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Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Josh Adams

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 2/23/2023 12:28:09 PM

JOB DESCRIPTION

MCA 400

SDG NUMBER 03D2057073

JOB NUMBER

890-4119-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/23/2023 12:28:09 PM

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

Client: Ensolum
Project/Site: MCA 400

Laboratory Job ID: 890-4119-1
SDG: 03D2057073

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Definitions/Glossary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	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.
α	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: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

Job ID: 890-4119-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-4119-1

Receipt

The sample was received on 2/16/2023 3:24 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.0°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS04 (890-4119-1).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-46929 and analytical batch 880-46928 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is 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 880-46823 and analytical batch 880-46829 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

Client Sample ID: SS04

Lab Sample ID: 890-4119-1

Date Collected: 02/16/23 10:30

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		02/22/23 09:16	02/23/23 08:03	1
Toluene	<0.00202	U	0.00202	mg/Kg		02/22/23 09:16	02/23/23 08:03	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		02/22/23 09:16	02/23/23 08:03	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		02/22/23 09:16	02/23/23 08:03	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		02/22/23 09:16	02/23/23 08:03	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		02/22/23 09:16	02/23/23 08:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	02/22/23 09:16	02/23/23 08:03	1
1,4-Difluorobenzene (Surr)	118		70 - 130	02/22/23 09:16	02/23/23 08:03	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	944		50.0	mg/Kg			02/22/23 16:01	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	434		50.0	mg/Kg		02/21/23 12:10	02/21/23 19:33	1
Diesel Range Organics (Over C10-C28)	510	*1	50.0	mg/Kg		02/21/23 12:10	02/21/23 19:33	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/21/23 12:10	02/21/23 19:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	02/21/23 12:10	02/21/23 19:33	1
o-Terphenyl	107		70 - 130	02/21/23 12:10	02/21/23 19:33	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	312		5.00	mg/Kg			02/21/23 16:55	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-4119-1	SS04	111	118
890-4123-A-1-B MS	Matrix Spike	82	85
890-4123-A-1-C MSD	Matrix Spike Duplicate	100	108
LCS 880-46929/1-A	Lab Control Sample	92	107
LCSD 880-46929/2-A	Lab Control Sample Dup	103	110
MB 880-46868/5-A	Method Blank	82	104
MB 880-46929/5-A	Method Blank	85	99
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-24982-A-1-B MS	Matrix Spike	117	106
880-24982-A-1-C MSD	Matrix Spike Duplicate	120	109
890-4119-1	SS04	98	107
LCS 880-46823/2-A	Lab Control Sample	127	129
LCSD 880-46823/3-A	Lab Control Sample Dup	114	108
MB 880-46823/1-A	Method Blank	104	108
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46868/5-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46868

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/21/23 14:34	02/22/23 11:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130	02/21/23 14:34	02/22/23 11:49	1
1,4-Difluorobenzene (Surr)	104		70 - 130	02/21/23 14:34	02/22/23 11:49	1

Lab Sample ID: MB 880-46929/5-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46929

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/22/23 09:16	02/23/23 02:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	02/22/23 09:16	02/23/23 02:51	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/22/23 09:16	02/23/23 02:51	1

Lab Sample ID: LCS 880-46929/1-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1023		mg/Kg		102	70 - 130
Toluene	0.100	0.1011		mg/Kg		101	70 - 130
Ethylbenzene	0.100	0.09373		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1915		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09836		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: LCSD 880-46929/2-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1102		mg/Kg		110	70 - 130	7	35

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

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

Lab Sample ID: LCSD 880-46929/2-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1089		mg/Kg		109	70 - 130	7	35
Ethylbenzene	0.100	0.1027		mg/Kg		103	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.2128		mg/Kg		106	70 - 130	11	35
o-Xylene	0.100	0.1094		mg/Kg		109	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: 890-4123-A-1-B MS

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F2 F1	0.101	0.04951	F1	mg/Kg		49	70 - 130
Toluene	0.00490	F1	0.101	0.07116	F1	mg/Kg		66	70 - 130
Ethylbenzene	0.00362		0.101	0.07403		mg/Kg		70	70 - 130
m-Xylene & p-Xylene	0.00658	F1	0.202	0.1234	F1	mg/Kg		58	70 - 130
o-Xylene	0.00316	F1	0.101	0.06386	F1	mg/Kg		60	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	82		70 - 130
1,4-Difluorobenzene (Surr)	85		70 - 130

Lab Sample ID: 890-4123-A-1-C MSD

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F2 F1	0.0992	0.09288	F2	mg/Kg		93	70 - 130	61	35
Toluene	0.00490	F1	0.0992	0.09288		mg/Kg		89	70 - 130	26	35
Ethylbenzene	0.00362		0.0992	0.08391		mg/Kg		81	70 - 130	13	35
m-Xylene & p-Xylene	0.00658	F1	0.198	0.1714		mg/Kg		83	70 - 130	33	35
o-Xylene	0.00316	F1	0.0992	0.08869		mg/Kg		86	70 - 130	33	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

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

Lab Sample ID: MB 880-46823/1-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46823

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

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

Lab Sample ID: MB 880-46823/1-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46823

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/21/23 08:38	02/21/23 08:17	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130			02/21/23 08:38	02/21/23 08:17	1
o-Terphenyl	108		70 - 130			02/21/23 08:38	02/21/23 08:17	1

Lab Sample ID: LCS 880-46823/2-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1049		mg/Kg		105	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1212		mg/Kg		121	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	127		70 - 130				
o-Terphenyl	129		70 - 130				

Lab Sample ID: LCSD 880-46823/3-A

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	857.5		mg/Kg		86	70 - 130	20	20
Diesel Range Organics (Over C10-C28)	1000	955.2	*1	mg/Kg		96	70 - 130	24	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	114		70 - 130						
o-Terphenyl	108		70 - 130						

Lab Sample ID: 880-24982-A-1-B MS

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	1193		mg/Kg		117	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U *1	997	1034		mg/Kg		102	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	117		70 - 130						
o-Terphenyl	106		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

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

Lab Sample ID: 880-24982-A-1-C MSD

Matrix: Solid

Analysis Batch: 46829

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46823

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	987.5		mg/Kg		97	70 - 130	19	20
Diesel Range Organics (Over C10-C28)	<49.9	U *1	998	1068		mg/Kg		105	70 - 130	3	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	120		70 - 130								
o-Terphenyl	109		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46828/1-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/21/23 15:17	1

Lab Sample ID: LCS 880-46828/2-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	236.5		mg/Kg		95	90 - 110

Lab Sample ID: LCSD 880-46828/3-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	243.9		mg/Kg		98	90 - 110	3	20

Lab Sample ID: 890-4116-A-1-B MS

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	132		251	370.5		mg/Kg		95	90 - 110

Lab Sample ID: 890-4116-A-1-C MSD

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	132		251	371.3		mg/Kg		95	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

GC VOA

Prep Batch: 46868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-46868/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 46928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4119-1	SS04	Total/NA	Solid	8021B	46929
MB 880-46868/5-A	Method Blank	Total/NA	Solid	8021B	46868
MB 880-46929/5-A	Method Blank	Total/NA	Solid	8021B	46929
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	8021B	46929
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46929
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	46929
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	46929

Prep Batch: 46929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4119-1	SS04	Total/NA	Solid	5035	
MB 880-46929/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4119-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 46823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4119-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-46823/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-46823/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-46823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-24982-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-24982-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 46829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4119-1	SS04	Total/NA	Solid	8015B NM	46823
MB 880-46823/1-A	Method Blank	Total/NA	Solid	8015B NM	46823
LCS 880-46823/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	46823
LCSD 880-46823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	46823
880-24982-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	46823
880-24982-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	46823

Analysis Batch: 46965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4119-1	SS04	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

HPLC/IC

Leach Batch: 46828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4119-1	SS04	Soluble	Solid	DI Leach	
MB 880-46828/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4116-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4116-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 46871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4119-1	SS04	Soluble	Solid	300.0	46828
MB 880-46828/1-A	Method Blank	Soluble	Solid	300.0	46828
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	300.0	46828
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46828
890-4116-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	46828
890-4116-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	46828

Lab Chronicle

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

Client Sample ID: SS04
Date Collected: 02/16/23 10:30
Date Received: 02/16/23 15:24

Lab Sample ID: 890-4119-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 08:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47045	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			46965	02/22/23 16:01	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	46823	02/21/23 12:10	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46829	02/21/23 19:33	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		1			46871	02/21/23 16:55	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: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

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	EPA	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

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4119-1
SDG: 03D2057073

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4119-1	SS04	Solid	02/16/23 10:30	02/16/23 15:24	0.5'

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4119-1

SDG Number: 03D2057073

Login Number: 4119

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4119-1

SDG Number: 03D2057073

Login Number: 4119

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 02/21/23 08:18 AM

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



Environment Testing

- 1
- 2
- 3
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ANALYTICAL REPORT

PREPARED FOR

Attn: Josh Adams

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 2/23/2023 11:48:53 AM

JOB DESCRIPTION

MCA 400

SDG NUMBER 03D2057073

JOB NUMBER

890-4120-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/23/2023 11:48:53 AM

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

Client: Ensolum
Project/Site: MCA 400

Laboratory Job ID: 890-4120-1
SDG: 03D2057073

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Definitions/Glossary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

Job ID: 890-4120-1

Laboratory: Eurofins Carlsbad

Narrative	
Job Narrative 890-4120-1	

Receipt

The sample was received on 2/16/2023 3:24 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.0°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS07 (890-4120-1).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-46929 and analytical batch 880-46928 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA

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

HPLC/IC

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

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Client Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

Client Sample ID: SS07

Lab Sample ID: 890-4120-1

Date Collected: 02/16/23 11:25

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		02/22/23 09:16	02/23/23 09:10	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/22/23 09:16	02/23/23 09:10	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/22/23 09:16	02/23/23 09:10	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/22/23 09:16	02/23/23 09:10	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/22/23 09:16	02/23/23 09:10	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/22/23 09:16	02/23/23 09:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	02/22/23 09:16	02/23/23 09:10	1
1,4-Difluorobenzene (Surr)	103		70 - 130	02/22/23 09:16	02/23/23 09:10	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			02/23/23 12:18	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			02/23/23 11:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/22/23 16:36	02/23/23 04:53	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/22/23 16:36	02/23/23 04:53	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/22/23 16:36	02/23/23 04:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130	02/22/23 16:36	02/23/23 04:53	1
o-Terphenyl	95		70 - 130	02/22/23 16:36	02/23/23 04:53	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<4.97	U	4.97	mg/Kg			02/21/23 17:01	1

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Surrogate Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-4120-1	SS07	115	103
890-4123-A-1-B MS	Matrix Spike	82	85
890-4123-A-1-C MSD	Matrix Spike Duplicate	100	108
LCS 880-46929/1-A	Lab Control Sample	92	107
LCSD 880-46929/2-A	Lab Control Sample Dup	103	110
MB 880-46868/5-A	Method Blank	82	104
MB 880-46929/5-A	Method Blank	85	99
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-4120-1	SS07	95	95
890-4153-A-1-G MS	Matrix Spike	117	104
890-4153-A-1-H MSD	Matrix Spike Duplicate	98	89
LCS 880-46977/2-A	Lab Control Sample	98	88
LCSD 880-46977/3-A	Lab Control Sample Dup	100	91
MB 880-46977/1-A	Method Blank	126	127
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46868/5-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46868

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/21/23 14:34	02/22/23 11:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130	02/21/23 14:34	02/22/23 11:49	1
1,4-Difluorobenzene (Surr)	104		70 - 130	02/21/23 14:34	02/22/23 11:49	1

Lab Sample ID: MB 880-46929/5-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46929

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/22/23 09:16	02/23/23 02:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	02/22/23 09:16	02/23/23 02:51	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/22/23 09:16	02/23/23 02:51	1

Lab Sample ID: LCS 880-46929/1-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1023		mg/Kg		102	70 - 130
Toluene	0.100	0.1011		mg/Kg		101	70 - 130
Ethylbenzene	0.100	0.09373		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1915		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09836		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: LCSD 880-46929/2-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1102		mg/Kg		110	70 - 130	7	35

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

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

Lab Sample ID: LCSD 880-46929/2-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1089		mg/Kg		109	70 - 130	7	35
Ethylbenzene	0.100	0.1027		mg/Kg		103	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.2128		mg/Kg		106	70 - 130	11	35
o-Xylene	0.100	0.1094		mg/Kg		109	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: 890-4123-A-1-B MS

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F1 F2	0.101	0.04951	F1	mg/Kg		49	70 - 130
Toluene	0.00490	F1	0.101	0.07116	F1	mg/Kg		66	70 - 130
Ethylbenzene	0.00362		0.101	0.07403		mg/Kg		70	70 - 130
m-Xylene & p-Xylene	0.00658	F1	0.202	0.1234	F1	mg/Kg		58	70 - 130
o-Xylene	0.00316	F1	0.101	0.06386	F1	mg/Kg		60	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	82		70 - 130
1,4-Difluorobenzene (Surr)	85		70 - 130

Lab Sample ID: 890-4123-A-1-C MSD

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F1 F2	0.0992	0.09288	F2	mg/Kg		93	70 - 130	61	35
Toluene	0.00490	F1	0.0992	0.09288		mg/Kg		89	70 - 130	26	35
Ethylbenzene	0.00362		0.0992	0.08391		mg/Kg		81	70 - 130	13	35
m-Xylene & p-Xylene	0.00658	F1	0.198	0.1714		mg/Kg		83	70 - 130	33	35
o-Xylene	0.00316	F1	0.0992	0.08869		mg/Kg		86	70 - 130	33	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

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

Lab Sample ID: MB 880-46977/1-A

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46977

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/22/23 16:36	02/22/23 21:03	1

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

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

Lab Sample ID: MB 880-46977/1-A

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46977

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/22/23 16:36	02/22/23 21:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/22/23 16:36	02/22/23 21:03	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	126		70 - 130			02/22/23 16:36	02/22/23 21:03	1
o-Terphenyl	127		70 - 130			02/22/23 16:36	02/22/23 21:03	1

Lab Sample ID: LCS 880-46977/2-A

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46977

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	832.8		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	1000	815.4		mg/Kg		82	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	98		70 - 130				
o-Terphenyl	88		70 - 130				

Lab Sample ID: LCSD 880-46977/3-A

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46977

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	878.3		mg/Kg		88	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	830.0		mg/Kg		83	70 - 130	2	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	100		70 - 130						
o-Terphenyl	91		70 - 130						

Lab Sample ID: 890-4153-A-1-G MS

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46977

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	860.3		mg/Kg		84	70 - 130
Diesel Range Organics (Over C10-C28)	59.4		998	1043		mg/Kg		99	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	117		70 - 130						
o-Terphenyl	104		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

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

Lab Sample ID: 890-4153-A-1-H MSD

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46977

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	988.5		mg/Kg		97	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	59.4		997	883.4		mg/Kg		83	70 - 130	17	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	98		70 - 130								
o-Terphenyl	89		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46828/1-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/21/23 15:17	1

Lab Sample ID: LCS 880-46828/2-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	236.5		mg/Kg		95	90 - 110

Lab Sample ID: LCSD 880-46828/3-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	243.9		mg/Kg		98	90 - 110	3	20

Lab Sample ID: 890-4120-1 MS

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: SS07

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	<4.97	U	249	240.7		mg/Kg		95	90 - 110

Lab Sample ID: 890-4120-1 MSD

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: SS07

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<4.97	U	249	240.4		mg/Kg		95	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

GC VOA

Prep Batch: 46868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-46868/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 46928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4120-1	SS07	Total/NA	Solid	8021B	46929
MB 880-46868/5-A	Method Blank	Total/NA	Solid	8021B	46868
MB 880-46929/5-A	Method Blank	Total/NA	Solid	8021B	46929
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	8021B	46929
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46929
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	46929
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	46929

Prep Batch: 46929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4120-1	SS07	Total/NA	Solid	5035	
MB 880-46929/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4120-1	SS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 46917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4120-1	SS07	Total/NA	Solid	8015B NM	46977
MB 880-46977/1-A	Method Blank	Total/NA	Solid	8015B NM	46977
LCS 880-46977/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	46977
LCSD 880-46977/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	46977
890-4153-A-1-G MS	Matrix Spike	Total/NA	Solid	8015B NM	46977
890-4153-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	46977

Prep Batch: 46977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4120-1	SS07	Total/NA	Solid	8015NM Prep	
MB 880-46977/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-46977/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-46977/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4153-A-1-G MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4153-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 47031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4120-1	SS07	Total/NA	Solid	8015 NM	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

HPLC/IC

Leach Batch: 46828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4120-1	SS07	Soluble	Solid	DI Leach	
MB 880-46828/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4120-1 MS	SS07	Soluble	Solid	DI Leach	
890-4120-1 MSD	SS07	Soluble	Solid	DI Leach	

Analysis Batch: 46871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4120-1	SS07	Soluble	Solid	300.0	46828
MB 880-46828/1-A	Method Blank	Soluble	Solid	300.0	46828
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	300.0	46828
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46828
890-4120-1 MS	SS07	Soluble	Solid	300.0	46828
890-4120-1 MSD	SS07	Soluble	Solid	300.0	46828

Lab Chronicle

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

Client Sample ID: SS07
Date Collected: 02/16/23 11:25
Date Received: 02/16/23 15:24

Lab Sample ID: 890-4120-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 09:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47046	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			47031	02/23/23 11:59	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	46977	02/22/23 16:36	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46917	02/23/23 04:53	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		1			46871	02/21/23 17:01	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: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

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	EPA	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

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4120-1
SDG: 03D2057073

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4120-1	SS07	Solid	02/16/23 11:25	02/16/23 15:24	0.5'

- 1
- 2
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- 12
- 13
- 14

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4120-1

SDG Number: 03D2057073

Login Number: 4120

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4120-1

SDG Number: 03D2057073

Login Number: 4120

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 02/21/23 08:18 AM

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



Environment Testing

- 1
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ANALYTICAL REPORT

PREPARED FOR

Attn: Josh Adams

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 2/23/2023 11:49:40 AM

JOB DESCRIPTION

MCA 400

SDG NUMBER 03D2057073

JOB NUMBER

890-4121-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/23/2023 11:49:40 AM

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

Client: Ensolum
Project/Site: MCA 400

Laboratory Job ID: 890-4121-1
SDG: 03D2057073

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Definitions/Glossary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Job ID: 890-4121-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-4121-1****Receipt**

The samples were received on 2/16/2023 3:24 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 4.0°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-4121-1), SS02 (890-4121-2), SS03 (890-4121-3), SS05 (890-4121-4) and SS06 (890-4121-5).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS01 (890-4121-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-46929 and analytical batch 880-46928 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS03 (890-4121-3) and SS05 (890-4121-4). 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

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Client Sample ID: SS01

Lab Sample ID: 890-4121-1

Date Collected: 02/16/23 10:00

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		02/22/23 09:16	02/23/23 09:44	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/22/23 09:16	02/23/23 09:44	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/22/23 09:16	02/23/23 09:44	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		02/22/23 09:16	02/23/23 09:44	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/22/23 09:16	02/23/23 09:44	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		02/22/23 09:16	02/23/23 09:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	65	S1-	70 - 130	02/22/23 09:16	02/23/23 09:44	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/22/23 09:16	02/23/23 09:44	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	85.6		49.9	mg/Kg			02/23/23 11:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/22/23 10:27	02/22/23 18:55	1
Diesel Range Organics (Over C10-C28)	85.6		49.9	mg/Kg		02/22/23 10:27	02/22/23 18:55	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/22/23 10:27	02/22/23 18:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	02/22/23 10:27	02/22/23 18:55	1
o-Terphenyl	94		70 - 130	02/22/23 10:27	02/22/23 18:55	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7680		50.5	mg/Kg			02/21/23 17:20	10

Client Sample ID: SS02

Lab Sample ID: 890-4121-2

Date Collected: 02/16/23 10:05

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/22/23 09:16	02/23/23 10:05	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/22/23 09:16	02/23/23 10:05	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/22/23 09:16	02/23/23 10:05	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/22/23 09:16	02/23/23 10:05	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/22/23 09:16	02/23/23 10:05	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/22/23 09:16	02/23/23 10:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	02/22/23 09:16	02/23/23 10:05	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Client Sample ID: SS02

Lab Sample ID: 890-4121-2

Date Collected: 02/16/23 10:05

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	120		70 - 130	02/22/23 09:16	02/23/23 10:05	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			02/23/23 12:18	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			02/23/23 11:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/22/23 10:27	02/22/23 19:16	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/22/23 10:27	02/22/23 19:16	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/22/23 10:27	02/22/23 19:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130			02/22/23 10:27	02/22/23 19:16	1
o-Terphenyl	86		70 - 130			02/22/23 10:27	02/22/23 19:16	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7270		50.0	mg/Kg			02/21/23 17:26	10

Client Sample ID: SS03

Lab Sample ID: 890-4121-3

Date Collected: 02/16/23 10:10

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.153		0.0397	mg/Kg		02/22/23 09:16	02/23/23 11:28	20
Toluene	<0.0397	U	0.0397	mg/Kg		02/22/23 09:16	02/23/23 11:28	20
Ethylbenzene	<0.0397	U	0.0397	mg/Kg		02/22/23 09:16	02/23/23 11:28	20
m-Xylene & p-Xylene	<0.0794	U	0.0794	mg/Kg		02/22/23 09:16	02/23/23 11:28	20
o-Xylene	<0.0397	U	0.0397	mg/Kg		02/22/23 09:16	02/23/23 11:28	20
Xylenes, Total	<0.0794	U	0.0794	mg/Kg		02/22/23 09:16	02/23/23 11:28	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	02/22/23 09:16	02/23/23 11:28	20
1,4-Difluorobenzene (Surr)	131	S1+	70 - 130	02/22/23 09:16	02/23/23 11:28	20

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.153		0.0794	mg/Kg			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/23/23 11:59	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Client Sample ID: SS03

Lab Sample ID: 890-4121-3

Date Collected: 02/16/23 10:10

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/22/23 10:27	02/22/23 19:38	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/22/23 10:27	02/22/23 19:38	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/22/23 10:27	02/22/23 19:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130			02/22/23 10:27	02/22/23 19:38	1
o-Terphenyl	87		70 - 130			02/22/23 10:27	02/22/23 19:38	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10800		99.6	mg/Kg			02/21/23 17:45	20

Client Sample ID: SS05

Lab Sample ID: 890-4121-4

Date Collected: 02/16/23 10:35

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.172		0.0396	mg/Kg		02/22/23 09:16	02/23/23 11:49	20
Toluene	<0.0396	U	0.0396	mg/Kg		02/22/23 09:16	02/23/23 11:49	20
Ethylbenzene	<0.0396	U	0.0396	mg/Kg		02/22/23 09:16	02/23/23 11:49	20
m-Xylene & p-Xylene	<0.0792	U	0.0792	mg/Kg		02/22/23 09:16	02/23/23 11:49	20
o-Xylene	<0.0396	U	0.0396	mg/Kg		02/22/23 09:16	02/23/23 11:49	20
Xylenes, Total	<0.0792	U	0.0792	mg/Kg		02/22/23 09:16	02/23/23 11:49	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130			02/22/23 09:16	02/23/23 11:49	20
1,4-Difluorobenzene (Surr)	134	S1+	70 - 130			02/22/23 09:16	02/23/23 11:49	20

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.172		0.0792	mg/Kg			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			02/23/23 11:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		02/22/23 10:27	02/22/23 20:00	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		02/22/23 10:27	02/22/23 20:00	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		02/22/23 10:27	02/22/23 20:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130			02/22/23 10:27	02/22/23 20:00	1
o-Terphenyl	87		70 - 130			02/22/23 10:27	02/22/23 20:00	1

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Client Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Client Sample ID: SS05

Lab Sample ID: 890-4121-4

Date Collected: 02/16/23 10:35

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8460		100	mg/Kg			02/21/23 17:51	20

Client Sample ID: SS06

Lab Sample ID: 890-4121-5

Date Collected: 02/16/23 10:40

Matrix: Solid

Date Received: 02/16/23 15:24

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 10:26	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 10:26	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 10:26	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/22/23 09:16	02/23/23 10:26	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 10:26	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/22/23 09:16	02/23/23 10:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130			02/22/23 09:16	02/23/23 10:26	1
1,4-Difluorobenzene (Surr)	112		70 - 130			02/22/23 09:16	02/23/23 10:26	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			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	723		50.0	mg/Kg			02/23/23 11:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	275		50.0	mg/Kg		02/22/23 10:27	02/22/23 20:21	1
Diesel Range Organics (Over C10-C28)	448		50.0	mg/Kg		02/22/23 10:27	02/22/23 20:21	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/22/23 10:27	02/22/23 20:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130			02/22/23 10:27	02/22/23 20:21	1
o-Terphenyl	99		70 - 130			02/22/23 10:27	02/22/23 20:21	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6300		49.8	mg/Kg			02/21/23 17:57	10

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Surrogate Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-4121-1	SS01	65 S1-	99
890-4121-2	SS02	106	120
890-4121-3	SS03	102	131 S1+
890-4121-4	SS05	104	134 S1+
890-4121-5	SS06	108	112
890-4123-A-1-B MS	Matrix Spike	82	85
890-4123-A-1-C MSD	Matrix Spike Duplicate	100	108
LCS 880-46929/1-A	Lab Control Sample	92	107
LCSD 880-46929/2-A	Lab Control Sample Dup	103	110
MB 880-46868/5-A	Method Blank	82	104
MB 880-46929/5-A	Method Blank	85	99
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-4121-1	SS01	98	94
890-4121-2	SS02	88	86
890-4121-3	SS03	90	87
890-4121-4	SS05	89	87
890-4121-5	SS06	95	99
LCS 880-46937/2-A	Lab Control Sample	120	109
LCSD 880-46937/3-A	Lab Control Sample Dup	122	110
MB 880-46937/1-A	Method Blank	125	124
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46868/5-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46868

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/21/23 14:34	02/22/23 11:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130	02/21/23 14:34	02/22/23 11:49	1
1,4-Difluorobenzene (Surr)	104		70 - 130	02/21/23 14:34	02/22/23 11:49	1

Lab Sample ID: MB 880-46929/5-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46929

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/22/23 09:16	02/23/23 02:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	02/22/23 09:16	02/23/23 02:51	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/22/23 09:16	02/23/23 02:51	1

Lab Sample ID: LCS 880-46929/1-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1023		mg/Kg		102	70 - 130
Toluene	0.100	0.1011		mg/Kg		101	70 - 130
Ethylbenzene	0.100	0.09373		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1915		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09836		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: LCSD 880-46929/2-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1102		mg/Kg		110	70 - 130	7	35

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

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

Lab Sample ID: LCSD 880-46929/2-A

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1089		mg/Kg		109	70 - 130	7	35
Ethylbenzene	0.100	0.1027		mg/Kg		103	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.2128		mg/Kg		106	70 - 130	11	35
o-Xylene	0.100	0.1094		mg/Kg		109	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: 890-4123-A-1-B MS

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F1 F2	0.101	0.04951	F1	mg/Kg		49	70 - 130
Toluene	0.00490	F1	0.101	0.07116	F1	mg/Kg		66	70 - 130
Ethylbenzene	0.00362		0.101	0.07403		mg/Kg		70	70 - 130
m-Xylene & p-Xylene	0.00658	F1	0.202	0.1234	F1	mg/Kg		58	70 - 130
o-Xylene	0.00316	F1	0.101	0.06386	F1	mg/Kg		60	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	82		70 - 130
1,4-Difluorobenzene (Surr)	85		70 - 130

Lab Sample ID: 890-4123-A-1-C MSD

Matrix: Solid

Analysis Batch: 46928

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F1 F2	0.0992	0.09288	F2	mg/Kg		93	70 - 130	61	35
Toluene	0.00490	F1	0.0992	0.09288		mg/Kg		89	70 - 130	26	35
Ethylbenzene	0.00362		0.0992	0.08391		mg/Kg		81	70 - 130	13	35
m-Xylene & p-Xylene	0.00658	F1	0.198	0.1714		mg/Kg		83	70 - 130	33	35
o-Xylene	0.00316	F1	0.0992	0.08869		mg/Kg		86	70 - 130	33	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

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

Lab Sample ID: MB 880-46937/1-A

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46937

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/22/23 10:27	02/22/23 09:13	1

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

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

Lab Sample ID: MB 880-46937/1-A

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 46937

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/22/23 10:27	02/22/23 09:13	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/22/23 10:27	02/22/23 09:13	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	125		70 - 130			02/22/23 10:27	02/22/23 09:13	1
o-Terphenyl	124		70 - 130			02/22/23 10:27	02/22/23 09:13	1

Lab Sample ID: LCS 880-46937/2-A

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 46937

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	999	1012		mg/Kg		101	70 - 130
Diesel Range Organics (Over C10-C28)	999	996.5		mg/Kg		100	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	120		70 - 130				
o-Terphenyl	109		70 - 130				

Lab Sample ID: LCSD 880-46937/3-A

Matrix: Solid

Analysis Batch: 46917

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 46937

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	999	930.7		mg/Kg		93	70 - 130	8	20
Diesel Range Organics (Over C10-C28)	999	999.6		mg/Kg		100	70 - 130	0	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	122		70 - 130						
o-Terphenyl	110		70 - 130						

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46828/1-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/21/23 15:17	1

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QC Sample Results

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-46828/2-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	236.5		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-46828/3-A

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	243.9		mg/Kg		98	90 - 110	3	20

Lab Sample ID: 890-4120-A-1-B MS

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	<4.97	U	249	240.7		mg/Kg		95	90 - 110		

Lab Sample ID: 890-4120-A-1-C MSD

Matrix: Solid

Analysis Batch: 46871

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<4.97	U	249	240.4		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

GC VOA

Prep Batch: 46868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-46868/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 46928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4121-1	SS01	Total/NA	Solid	8021B	46929
890-4121-2	SS02	Total/NA	Solid	8021B	46929
890-4121-3	SS03	Total/NA	Solid	8021B	46929
890-4121-4	SS05	Total/NA	Solid	8021B	46929
890-4121-5	SS06	Total/NA	Solid	8021B	46929
MB 880-46868/5-A	Method Blank	Total/NA	Solid	8021B	46868
MB 880-46929/5-A	Method Blank	Total/NA	Solid	8021B	46929
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	8021B	46929
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46929
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	46929
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	46929

Prep Batch: 46929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4121-1	SS01	Total/NA	Solid	5035	
890-4121-2	SS02	Total/NA	Solid	5035	
890-4121-3	SS03	Total/NA	Solid	5035	
890-4121-4	SS05	Total/NA	Solid	5035	
890-4121-5	SS06	Total/NA	Solid	5035	
MB 880-46929/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4121-1	SS01	Total/NA	Solid	Total BTEX	
890-4121-2	SS02	Total/NA	Solid	Total BTEX	
890-4121-3	SS03	Total/NA	Solid	Total BTEX	
890-4121-4	SS05	Total/NA	Solid	Total BTEX	
890-4121-5	SS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 46917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4121-1	SS01	Total/NA	Solid	8015B NM	46937
890-4121-2	SS02	Total/NA	Solid	8015B NM	46937
890-4121-3	SS03	Total/NA	Solid	8015B NM	46937
890-4121-4	SS05	Total/NA	Solid	8015B NM	46937
890-4121-5	SS06	Total/NA	Solid	8015B NM	46937
MB 880-46937/1-A	Method Blank	Total/NA	Solid	8015B NM	46937
LCS 880-46937/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	46937
LCSD 880-46937/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	46937

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QC Association Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

GC Semi VOA

Prep Batch: 46937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4121-1	SS01	Total/NA	Solid	8015NM Prep	
890-4121-2	SS02	Total/NA	Solid	8015NM Prep	
890-4121-3	SS03	Total/NA	Solid	8015NM Prep	
890-4121-4	SS05	Total/NA	Solid	8015NM Prep	
890-4121-5	SS06	Total/NA	Solid	8015NM Prep	
MB 880-46937/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-46937/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-46937/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 47026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4121-1	SS01	Total/NA	Solid	8015 NM	
890-4121-2	SS02	Total/NA	Solid	8015 NM	
890-4121-3	SS03	Total/NA	Solid	8015 NM	
890-4121-4	SS05	Total/NA	Solid	8015 NM	
890-4121-5	SS06	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 46828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4121-1	SS01	Soluble	Solid	DI Leach	
890-4121-2	SS02	Soluble	Solid	DI Leach	
890-4121-3	SS03	Soluble	Solid	DI Leach	
890-4121-4	SS05	Soluble	Solid	DI Leach	
890-4121-5	SS06	Soluble	Solid	DI Leach	
MB 880-46828/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4120-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4120-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 46871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4121-1	SS01	Soluble	Solid	300.0	46828
890-4121-2	SS02	Soluble	Solid	300.0	46828
890-4121-3	SS03	Soluble	Solid	300.0	46828
890-4121-4	SS05	Soluble	Solid	300.0	46828
890-4121-5	SS06	Soluble	Solid	300.0	46828
MB 880-46828/1-A	Method Blank	Soluble	Solid	300.0	46828
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	300.0	46828
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46828
890-4120-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	46828
890-4120-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	46828

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Client Sample ID: SS01

Lab Sample ID: 890-4121-1

Date Collected: 02/16/23 10:00

Matrix: Solid

Date Received: 02/16/23 15:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 09:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47047	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			47026	02/23/23 11:59	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	46937	02/22/23 10:27	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46917	02/22/23 18:55	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		10			46871	02/21/23 17:20	CH	EET MID

Client Sample ID: SS02

Lab Sample ID: 890-4121-2

Date Collected: 02/16/23 10:05

Matrix: Solid

Date Received: 02/16/23 15:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 10:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47047	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			47026	02/23/23 11:59	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	46937	02/22/23 10:27	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46917	02/22/23 19:16	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		10			46871	02/21/23 17:26	CH	EET MID

Client Sample ID: SS03

Lab Sample ID: 890-4121-3

Date Collected: 02/16/23 10:10

Matrix: Solid

Date Received: 02/16/23 15:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	46928	02/23/23 11:28	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47047	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			47026	02/23/23 11:59	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	46937	02/22/23 10:27	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46917	02/22/23 19:38	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		20			46871	02/21/23 17:45	CH	EET MID

Client Sample ID: SS05

Lab Sample ID: 890-4121-4

Date Collected: 02/16/23 10:35

Matrix: Solid

Date Received: 02/16/23 15:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	46928	02/23/23 11:49	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47047	02/23/23 12:18	AJ	EET MID

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Lab Chronicle

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Client Sample ID: SS05

Lab Sample ID: 890-4121-4

Date Collected: 02/16/23 10:35

Matrix: Solid

Date Received: 02/16/23 15:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			47026	02/23/23 11:59	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	46937	02/22/23 10:27	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46917	02/22/23 20:00	AJ	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		20			46871	02/21/23 17:51	CH	EET MID

Client Sample ID: SS06

Lab Sample ID: 890-4121-5

Date Collected: 02/16/23 10:40

Matrix: Solid

Date Received: 02/16/23 15:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 10:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47047	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			47026	02/23/23 11:59	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	46937	02/22/23 10:27	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46917	02/22/23 20:21	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		10			46871	02/21/23 17:57	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
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

- 1
- 2
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Method Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

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	EPA	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

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: MCA 400

Job ID: 890-4121-1
SDG: 03D2057073

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4121-1	SS01	Solid	02/16/23 10:00	02/16/23 15:24	0.5'
890-4121-2	SS02	Solid	02/16/23 10:05	02/16/23 15:24	0.5'
890-4121-3	SS03	Solid	02/16/23 10:10	02/16/23 15:24	0.5'
890-4121-4	SS05	Solid	02/16/23 10:35	02/16/23 15:24	0.5'
890-4121-5	SS06	Solid	02/16/23 10:40	02/16/23 15:24	0.5'

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Environment Testing

Xenco

Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Josh Adams	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marienfeld St Suite 400	Address:	601 N Marienfeld St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:	303-517-8437	Email:	jadams@ensolum.com, kjennings@ensolum.com

Work Order Comments			
Program: UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: _____ Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADaPt <input type="checkbox"/> Other: _____			

[illegible]

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Ti	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U			Hg:	1631 / 245.1 / 7470	7471						

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 DIV	Anaconda St. John	2-16-23 1524			
3			4		
5			6		

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4121-1

SDG Number: 03D2057073

Login Number: 4121

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4121-1

SDG Number: 03D2057073

Login Number: 4121

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 02/21/23 08:18 AM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kalei Jennings
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 4/3/2023 1:48:40 PM

JOB DESCRIPTION

Maverick MCA 400
SDG NUMBER Lea County NM

JOB NUMBER

890-4359-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
4/3/2023 1:48:40 PM

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

Client: Ensolum
Project/Site: Maverick MCA 400

Laboratory Job ID: 890-4359-1
SDG: Lea County NM

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Definitions/Glossary

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Job ID: 890-4359-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-4359-1

Receipt

The sample was received on 3/20/2023 9:01 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS04 (890-4359-1).

GC VOA

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-4352-A-1-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS04 (890-4359-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Client Sample ID: SS04

Lab Sample ID: 890-4359-1

Date Collected: 03/17/23 10:45

Matrix: Solid

Date Received: 03/20/23 09:01

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		03/27/23 16:41	03/30/23 16:22	1
Toluene	<0.00202	U	0.00202	mg/Kg		03/27/23 16:41	03/30/23 16:22	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		03/27/23 16:41	03/30/23 16:22	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		03/27/23 16:41	03/30/23 16:22	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		03/27/23 16:41	03/30/23 16:22	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		03/27/23 16:41	03/30/23 16:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130			03/27/23 16:41	03/30/23 16:22	1
1,4-Difluorobenzene (Surr)	106		70 - 130			03/27/23 16:41	03/30/23 16:22	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			03/31/23 12:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			03/27/23 11:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/24/23 16:46	03/26/23 19:29	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/24/23 16:46	03/26/23 19:29	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/24/23 16:46	03/26/23 19:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	167	S1+	70 - 130			03/24/23 16:46	03/26/23 19:29	1
o-Terphenyl	154	S1+	70 - 130			03/24/23 16:46	03/26/23 19:29	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	62.2		5.00	mg/Kg			04/01/23 00:21	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Method: 8021B - Volatile Organic Compounds (GC)
Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-26282-A-81-G MS	Matrix Spike	103	108
880-26282-A-81-H MSD	Matrix Spike Duplicate	96	105
890-4359-1	SS04	99	106
LCS 880-49668/1-A	Lab Control Sample	97	110
LCSD 880-49668/2-A	Lab Control Sample Dup	99	108
MB 880-49668/5-A	Method Blank	86	101
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-4352-A-1-B MS	Matrix Spike	79	76
890-4359-1	SS04	167 S1+	154 S1+
LCS 880-49456/2-A	Lab Control Sample	77	83
LCSD 880-49456/3-A	Lab Control Sample Dup	76	85
MB 880-49456/1-A	Method Blank	107	111
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-49668/5-A

Matrix: Solid

Analysis Batch: 49921

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 49668

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		03/27/23 16:41	03/30/23 12:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		03/27/23 16:41	03/30/23 12:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		03/27/23 16:41	03/30/23 12:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		03/27/23 16:41	03/30/23 12:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		03/27/23 16:41	03/30/23 12:49	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		03/27/23 16:41	03/30/23 12:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130	03/27/23 16:41	03/30/23 12:49	1
1,4-Difluorobenzene (Surr)	101		70 - 130	03/27/23 16:41	03/30/23 12:49	1

Lab Sample ID: LCS 880-49668/1-A

Matrix: Solid

Analysis Batch: 49921

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 49668

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1106		mg/Kg		111	70 - 130
Toluene	0.100	0.1078		mg/Kg		108	70 - 130
Ethylbenzene	0.100	0.09809		mg/Kg		98	70 - 130
m-Xylene & p-Xylene	0.200	0.1929		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09750		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: LCSD 880-49668/2-A

Matrix: Solid

Analysis Batch: 49921

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 49668

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1093		mg/Kg		109	70 - 130	1	35
Toluene	0.100	0.1087		mg/Kg		109	70 - 130	1	35
Ethylbenzene	0.100	0.09789		mg/Kg		98	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.1927		mg/Kg		96	70 - 130	0	35
o-Xylene	0.100	0.09709		mg/Kg		97	70 - 130	0	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: 880-26282-A-81-G MS

Matrix: Solid

Analysis Batch: 49921

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 49668

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0998	0.1028		mg/Kg		103	70 - 130
Toluene	<0.00200	U	0.0998	0.1021		mg/Kg		101	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

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

Lab Sample ID: 880-26282-A-81-G MS

Matrix: Solid

Analysis Batch: 49921

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 49668

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0998	0.09248		mg/Kg		93	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.1819		mg/Kg		91	70 - 130
o-Xylene	<0.00200	U	0.0998	0.09104		mg/Kg		91	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: 880-26282-A-81-H MSD

Matrix: Solid

Analysis Batch: 49921

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 49668

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0990	0.09538		mg/Kg		96	70 - 130	8	35
Toluene	<0.00200	U	0.0990	0.09252		mg/Kg		92	70 - 130	10	35
Ethylbenzene	<0.00200	U	0.0990	0.08453		mg/Kg		85	70 - 130	9	35
m-Xylene & p-Xylene	<0.00401	U	0.198	0.1662		mg/Kg		84	70 - 130	9	35
o-Xylene	<0.00200	U	0.0990	0.08314		mg/Kg		84	70 - 130	9	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

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

Lab Sample ID: MB 880-49456/1-A

Matrix: Solid

Analysis Batch: 49514

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 49456

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		03/24/23 16:46	03/26/23 08:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		03/24/23 16:46	03/26/23 08:27	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		03/24/23 16:46	03/26/23 08:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130	03/24/23 16:46	03/26/23 08:27	1
o-Terphenyl	111		70 - 130	03/24/23 16:46	03/26/23 08:27	1

Lab Sample ID: LCS 880-49456/2-A

Matrix: Solid

Analysis Batch: 49514

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 49456

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	882.5		mg/Kg		88	70 - 130
Diesel Range Organics (Over C10-C28)	1000	790.5		mg/Kg		79	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

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

Lab Sample ID: LCS 880-49456/2-A
Matrix: Solid
Analysis Batch: 49514

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49456

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	83		70 - 130

Lab Sample ID: LCSD 880-49456/3-A
Matrix: Solid
Analysis Batch: 49514

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49456

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	935.9		mg/Kg		94	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	1000	802.7		mg/Kg		80	70 - 130	2	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	76		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 890-4352-A-1-B MS
Matrix: Solid
Analysis Batch: 49514

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49456

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	831.5		mg/Kg		79	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	998	797.6		mg/Kg		80	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	79		70 - 130
o-Terphenyl	76		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-49881/1-A
Matrix: Solid
Analysis Batch: 50038

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			03/31/23 22:20	1

Lab Sample ID: LCS 880-49881/2-A
Matrix: Solid
Analysis Batch: 50038

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	263.2		mg/Kg		105	90 - 110

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-49881/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 50038											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	263.2		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 890-4352-A-11-D MS				Client Sample ID: Matrix Spike							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 50038											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	33.6		252	285.7		mg/Kg		100	90 - 110		

Lab Sample ID: 890-4352-A-11-E MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 50038											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	33.6		252	285.7		mg/Kg		100	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

GC VOA

Prep Batch: 49668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4359-1	SS04	Total/NA	Solid	5035	
MB 880-49668/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-49668/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-49668/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-26282-A-81-G MS	Matrix Spike	Total/NA	Solid	5035	
880-26282-A-81-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 49921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4359-1	SS04	Total/NA	Solid	8021B	49668
MB 880-49668/5-A	Method Blank	Total/NA	Solid	8021B	49668
LCS 880-49668/1-A	Lab Control Sample	Total/NA	Solid	8021B	49668
LCSD 880-49668/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	49668
880-26282-A-81-G MS	Matrix Spike	Total/NA	Solid	8021B	49668
880-26282-A-81-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	49668

Analysis Batch: 50036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4359-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 49456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4359-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-49456/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-49456/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-49456/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4352-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	

Analysis Batch: 49514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4359-1	SS04	Total/NA	Solid	8015B NM	49456
MB 880-49456/1-A	Method Blank	Total/NA	Solid	8015B NM	49456
LCS 880-49456/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	49456
LCSD 880-49456/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	49456
890-4352-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	49456

Analysis Batch: 49621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4359-1	SS04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 49881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4359-1	SS04	Soluble	Solid	DI Leach	
MB 880-49881/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-49881/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-49881/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4352-A-11-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4352-A-11-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

HPLC/IC

Analysis Batch: 50038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4359-1	SS04	Soluble	Solid	300.0	49881
MB 880-49881/1-A	Method Blank	Soluble	Solid	300.0	49881
LCS 880-49881/2-A	Lab Control Sample	Soluble	Solid	300.0	49881
LCSD 880-49881/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	49881
890-4352-A-11-D MS	Matrix Spike	Soluble	Solid	300.0	49881
890-4352-A-11-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	49881

Lab Chronicle

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Client Sample ID: SS04

Lab Sample ID: 890-4359-1

Date Collected: 03/17/23 10:45

Matrix: Solid

Date Received: 03/20/23 09:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	49668	03/27/23 16:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	49921	03/30/23 16:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			50036	03/31/23 12:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			49621	03/27/23 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	49456	03/24/23 16:46	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49514	03/26/23 19:29	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	49881	03/29/23 16:18	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	50038	04/01/23 00:21	SMC	EET MID

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Method Summary

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
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	EPA	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

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Maverick MCA 400

Job ID: 890-4359-1
SDG: Lea County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4359-1	SS04	Solid	03/17/23 10:45	03/20/23 09:01	0.5'

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Work Order Comments			
Program:	UST/PST <input type="checkbox"/>	PRP <input type="checkbox"/>	Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:			
Reporting:	Level II <input type="checkbox"/>	Level III <input type="checkbox"/>	PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/>	ADaPT <input type="checkbox"/>	Other: _____

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>DN</i>	<i>Andrew Stief</i>	5/20/23 0901			
3			4		
5			6		

1211 W Florida Ave
Midland TX 79701
Phone 432-704-5440

Chain of Custody Record



Environment Testing

4/3/2023

[illegible]

Ver 06/08/2021

Page 19 of 21

Released to Imaging: 10/4/2023 10:47:40 AM

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4359-1

SDG Number: Lea County NM

Login Number: 4359

List Number: 1

Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4359-1

SDG Number: Lea County NM

Login Number: 4359

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 03/21/23 11:22 AM

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



APPENDIX E

NMOCD Notifications

From: [Enviro, OCD, EMNRD](#)
To: [Kalei Jennings](#)
Cc: [Bratcher, Michael, EMNRD](#); [Nobui, Jennifer, EMNRD](#)
Subject: RE: [EXTERNAL] Maverick Permian - Sampling Notification (Week of 3/20/2023)
Date: Thursday, March 16, 2023 8:16:44 AM
Attachments: [image005.jpg](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

[**EXTERNAL EMAIL**]

Kalei,

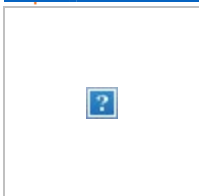
Kalei,

Thank you for the notification. The notification requirement is two full business days which for sampling on Monday would be at the latest at the end of the workday on Wednesday. If you can please provide specific times and dates of sampling in all future communications also, 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.

Thank you for your cooperation.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
<http://www.emnrd.nm.gov>



From: Kalei Jennings <kjennings@ensolum.com>
Sent: Thursday, March 16, 2023 7:29 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] Maverick Permian - Sampling Notification (Week of 3/20/2023)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

Maverick Permian, LLC (Maverick) plans to complete sampling activities at the following sites the week of March 20, 2023.

- SEMU Permian 37 / NAPP2305453661
- EVGSAU 2963-001/ NAPP2235371799
- Grayburg Eumont Straw Battery/ NAPP2302036818
- MCA 351/ NAPP2302034681
- MCA 254/ NAPP2302035947
- MCA 400/NAPP2305455050

Thank you,



Kalei Jennings

Senior Scientist

817-683-2503

Ensolum, LLC



From: [Enviro, OCD, EMNRD](#)
To: [Kalei Jennings](#)
Subject: RE: [EXTERNAL] Maverick Permian - Sampling Notification (Week of 3/27/2023)
Date: Thursday, March 23, 2023 3:23:38 PM
Attachments: [image005.jpg](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

[**EXTERNAL EMAIL**]

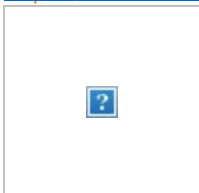
Kalei,

Please disregard my previous email. My apologies. I see that you will begin sampling on 03/28/2023 and that you have provided dates for each site. Thank you!

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.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
<http://www.emnrd.nm.gov>



From: Kalei Jennings <kjennings@ensolum.com>
Sent: Thursday, March 23, 2023 1:47 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] Maverick Permian - Sampling Notification (Week of 3/27/2023)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

Maverick Permian, LLC (Maverick) plans to complete sampling activities at the following site the week of March 27, 2023.

- Grayburg Eumont Straw Battery/ NAPP2302036818
 - Sampling Date: 3/28/2023 & 3/29/2023
- MCA 351/ NAPP2302034681

- Sampling Date: 3/30/2023 & 3/31/2023
- MCA 254/ NAPP2302035947
 - Sampling Date: 3/28/2023 & 3/29/2023
- MCA 400/NAPP230545505
 - Sampling Date: 3/29/2023
- MCA 301/ NAPP230755601
 - Sampling Date: 3/31/2023
- SC Federal Battery / NAPP2303272686
 - Sampling Date: 3/28/2023 & 3/29/2023
- MCA 151 / NAPP2235377174
 - Sampling Date: 3/28/2023

Thank you,



Kalei Jennings

Senior Scientist

817-683-2503

Ensolum, LLC



From: [Enviro, OCD, EMNRD](#)
To: [Kalei Jennings](#)
Cc: [Bratcher, Michael, EMNRD](#); [Nobui, Jennifer, EMNRD](#)
Subject: RE: [EXTERNAL] Maverick Permian - Sampling Notification (Week of 5/15/2023)
Date: Friday, May 12, 2023 3:08:14 PM
Attachments: [image005.jpg](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

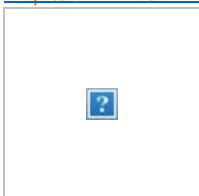
[**EXTERNAL EMAIL**]

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.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
<http://www.emnrd.nm.gov>



From: Kalei Jennings <kjennings@ensolum.com>
Sent: Friday, May 12, 2023 2:47 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] Maverick Permian - Sampling Notification (Week of 5/15/2023)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

Maverick Permian, LLC (Maverick) plans to complete sampling activities at the following site the week of May 15, 2023.

- EVGSAU 2418-001 / NAPP2231954757
 - Sampling Date: 5/17/2023 & 5/18/2023
- EVGSAU 2963-001/ NAPP2235371799
 - Sampling Date: 5/17/2023 & 5/18/2023

- MCA 400 / NAPP2305455050
 - Sampling Date: 5/17/2023
- EVGSAU 2437-001/ NAPP2303273838
 - Sampling Date: 5/17/2023 & 5/18/2023

Thank you,



Kalei Jennings

Senior Scientist

817-683-2503

Ensolum, LLC





APPENDIX F

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	NAPP2305455050
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Maverick Permian, LLC	OGRID: 331199
Contact Name: Bryce Wagoner	Contact Telephone: 928-241-1862
Contact email: Bryce.Wagoner@mavresources.com	Incident # (assigned by OCD) NAPP2305455050
Contact mailing address: 1410 NW County Road Hobbs, NM 88240	

Location of Release Source

Latitude 32.805161 Longitude -103.760712
(NAD 83 in decimal degrees to 5 decimal places)

Site Name MCA 400	Site Type
Date Release Discovered February 13, 2023	API# (if applicable) 30-025-38973

Unit Letter	Section	Township	Range	County
L	27	17S	32E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 3 bbls	Volume Recovered (bbls) 0.5 bbls
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 12.6 bbls	Volume Recovered (bbls) 2 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by internal corrosion of a 2-inch nipple The release occurred on and off pad. A vacuum truck was dispatched to the location and recovered approximately 2.5 bbls of free-standing fluids. The source of the release has been stopped and the impacted area has been secured.

NAPP2305455050

Pooled Fluids on the Surface										
	Length (ft.)	Width (ft.)	Depth (in)	# of Boundaries <i>*edges of pool where depth is 0. don't count shared boundaries</i>	Oil-Water Ratio (%)	Pooled Area (ft²)	Estimated Average Depth (ft.)	Pooled Volume (bbl.)	Volume of Oil in Subsurface (bbl.)	Volume of Water in Subsurface (bbl.)
Rectangle A	40.0	75.0	1.0	4.0	0.20	3000.0	0.0	11.1	2.23	8.90
Rectangle B					0.01	0.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle C						0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle D						0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle E						0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Total Volume (bbls):								11.13	2.23	8.90

Subsurface Fluids										
	Length (ft.)	Width (ft.)	Depth (in.)	Saturation (%) <i>*10% in consolidated sediments after rain to 50% in sand with no precipitation</i>	Oil-Water Ratio (%)	Area (ft²)	Volume (bbl.)	Estimated Volume in Subsurface (bbl.)	Volume of Oil in Subsurface (bbl.)	Volume of Water in Subsurface (bbl.)
Rectangle A	40.0	75.0	1.0	0.1	0.20	3000.0	44.5	4.5	0.89	3.6
Rectangle B						0.0	0.0	0.0	0.00	0.0
Rectangle C						0.0	0.0	0.0	0.00	0.0
Rectangle D						0.0	0.0	0.0	0.00	0.0
Rectangle E						0.0	0.0	0.0	0.00	0.0
Rectangle F						0.0	0.0	0.0	0.00	0.0
Rectangle G						0.0	0.0	0.0	0.00	0.0
Rectangle H						0.0	0.0	0.0	0.00	0.0
Rectangle I						0.0	0.0	0.0	0.00	0.0
Rectangle J						0.0	0.0	0.0	0.00	0.0
Total Volume (bbls):								4.45	0.89	3.56

TOTAL RELEASE VOLUME (bbls):	15.6
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Incident ID	NAPP2305455050
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>>100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

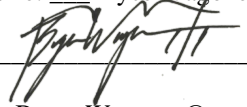
State of New Mexico
Oil Conservation Division

Page 4

Incident ID	NAPP2305455050
District RP	
Facility ID	
Application ID	

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

Printed Name: Bryce Wagoner Title: Permian HSE Specialist II

Signature:  Date: 07/13/20203

email: Bryce.Wagoner@mavresources.com Telephone: 928-241-1862

OCD Only

Received by: Shelly Wells Date: 7/14/2023

Incident ID	NAPP2305455050
District RP	
Facility ID	
Application ID	

Closure

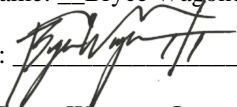
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled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

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Bryce Wagoner Title: HSE Permian Specialist II

Signature:  Date: 07/13/2023

email: Bryce.Wagoner@mavresources.com Telephone: 928-241-1862

OCD Only

Received by: Shelly Wells Date: 7/14/2023

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Nelson Velez Date: 10/04/2023

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

Remediation has met 19.15.29 NMAC requirements. Soil impacts exceeding the reclamation standards have been left in place and are required to meet 19.15.29.13D (1) NMAC once the site is no longer reasonably needed for production or subsequent drilling operations.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 240133

CONDITIONS

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID: 331199
	Action Number: 240133
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Remediation has met 19.15.29 NMAC requirements. Soil impacts exceeding the reclamation standards have been left in place and are required to meet 19.15.29.13D (1) NMAC once the site is no longer reasonably needed for production or subsequent drilling operations.	10/4/2023