ENSOLUM

October 10, 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: Remediation Work Plan
Superman Frac Pond
Incident Number NAPP2320554259
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of ConocoPhillips Company (COP), has prepared the following *Remediation Work Plan* (*RWP*) to document assessment and delineation activities completed at the Superman Frac Pond (Site). The purpose of the assessment and delineation activities was to determine the lateral and vertical extent of impacted soil resulting from the July 13, 2023, release of treated produced water into the pasture area adjacent to the Site. The following *RWP* proposes excavation of the impacted soil identified during the delineation activities and requests a variance for the frequency of excavation confirmation samples.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit G, Section 30, Township 26 South, Range 32 East, in Lea County, New Mexico (32.0158°, -103.7133°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On July 13, 2023, a vehicle struck a lay flat line and resulted in the release of approximately 495.3183 barrels (bbls) of treated produced water into the adjacent pasture. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 240 bbls of treated produced water were recovered. COG reported the release immediately to the New Mexico Oil Conservation Division (NMOCD) via email on July 13, 2023, and submitted a Release Notification Form C-141 (Form C-141) on July 24, 2023. The release was assigned Incident Number NAPP2320554259.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is estimated to be between 51 and 100 feet below ground surface (bgs) based on a soil boring (BH-1) located approximately 0.5 miles northeast of the Site. Soil boring BH-1 was drilled via air rotary drilling rig during October 2019 to a depth of 60 feet bgs. No groundwater was encountered while drilling and the boring was properly abandoned. The lithologic/soil sampling log is

included in Appendix A. All wells used for depth to groundwater determination are depicted on Figure 1 and the referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a freshwater emergent wetland, located approximately 4,040 feet south of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 10,000 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 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following remediation.

INITIAL SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On August 2, 2023, Ensolum personnel completed a Site visit to evaluate the release extent based on information provided on the Form C-141 and visual observations. Eleven assessment soil samples (SS01 through SS11) were collected within and around the release extent at a depth of approximately 0.5 feet bgs. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The release extent and assessment soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site visit and a photographic log is included in Appendix B.

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 analyses of the following constituents of concern (COCs): 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 soil samples SS01 through SS04, collected around the release extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria, and successfully confirmed the lateral extent of the release. Laboratory analytical results for assessment soil samples SS05 through SS09, collected within the release extent, indicated all COC concentrations were compliant with the Site Closure Criteria; however, chloride concentrations exceeded the reclamation requirement. Laboratory analytical results for assessment soil samples SS10 and SS11, collected within the release extent, indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirement. Based on visible staining in the release area, elevated field screening results, and laboratory analytical results for the assessment soil samples, additional delineation activities were warranted.

DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

Between September 7 and September 8, 2023, delineation activities were conducted at the Site to further assess the extent of the release. Boreholes were advanced via hand auger at the locations of initial assessment samples SS06 through SS11, to assess the vertical extent of the release. Eight additional boreholes (SS12 through SS19) were advanced within and around the release extent to further define the lateral and vertical extent of the release. The boreholes were advanced to depths ranging from 1-foot to 3 feet bgs. Final depth of the boreholes was determined by field screening results indicating compliance with the most stringent Table I Closure Criteria or hand auger refusal. Soil from the boreholes was field screened at 1-foot intervals for VOCs and chloride using the same procedures described above. Field screening results and observations for the boreholes were logged on lithologic/soil sampling logs, which are included in Appendix C. Discrete delineation soil samples were collected from each borehole at depths ranging from 0.5 feet to 3 feet bgs. The delineation soil samples were collected, handled, and analyzed following the same procedures as described above. The delineation soil sample locations are depicted on Figure 3.

Laboratory analytical results for the delineation soil samples collected from boreholes SS05 through SS09, SS13, and SS15 through SS17, indicated that chloride impacted soil is present in the top 4 feet of the pasture release area. Laboratory analytical results for the delineation soil samples collected from boreholes SS10, SS11, SS12, SS14, SS18, and SS19 indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirement. The laboratory analytical results are summarized on the attached Table 1 and the complete laboratory analytical reports are included in Appendix D.

PROPOSED REMEDIAL ACTIONS

- Chloride impacted soil was identified in the pasture release area at depths ranging from 0.5 to 3 feet bgs. As a result, COP proposes excavation of chloride impacted soil in the areas of boreholes SS05 through SS09, SS13, and SS15 through SS17. Excavation will proceed laterally and vertically until sidewall and floor samples indicate chloride concentrations are compliant with the reclamation requirements in the top four feet. The Site Closure Criteria will be applied to floor samples collected at depths of 4 feet bgs or greater. The proposed excavation extent is depicted on Figure 3.
- Due to the estimated 84,215 square foot size of the excavation, COP requests a variance for frequency of excavation confirmation samples. COP proposes the frequency of confirmation sampling for the excavation floor to be decreased from every 200 square feet (approximately 421 samples) to every 500 square feet (approximately 168 samples). Each 5-point composite floor sample will represent a 500 square foot area. Sidewall samples will be collected at a frequency of every 200 square feet.
- The 5-point composite samples will be collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The excavation samples will be analyzed for chloride only, the released fluid was treated produced water and no hydrocarbons were detected in any of the soil samples collected within the release extent.
- An estimated 12,477 cubic yards of chloride impacted soil is anticipated to be excavated. The excavated soil will be transferred to a New Mexico approved disposal facility for disposal.
- The excavation will be backfilled and recontoured to match pre-existing conditions. The disturbed pasture will be re-seeded with an approved BLM seed mixture.

COP will complete the excavation activities within 90 days of the date of approval of this *RWP* by the NMOCD. COP believes the scope of work described above will meet requirements set forth in 19.15.29 NMAC and is protective of human health, the environment, and groundwater. As such, COG respectfully requests approval of this *RWP* from NMOCD. NMOCD notifications are included in Appendix E and the Form C-141 is included in Appendix F

If you have any questions or comments, please contact Ms. Hadlie Green at (432) 557-8895 or hgreen@ensolum.com.

Sincerely,
Ensolum, LLC

Hadlie Green
Project Geologist

Aimee Cole
Senior Managing Scientist

cc: Justin Carlile, ConocoPhillips Company
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map
Figure 2	Assessment Soil Sample Locations
Figure 3	Proposed Excavation Extent
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Lithologic / Soil Sampling Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Notifications
Appendix F	Form C-141

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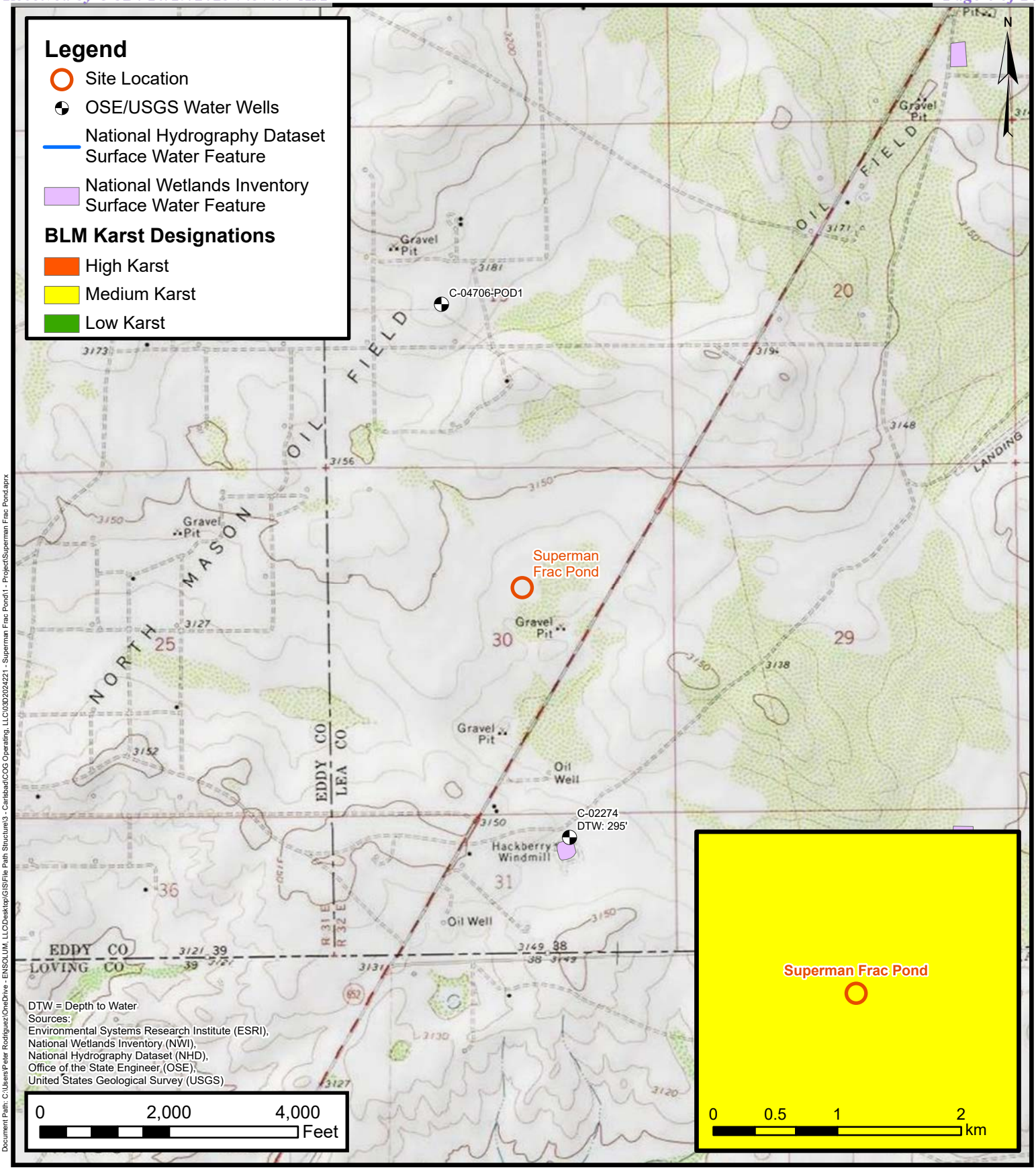
FIGURES



Document Path: C:\Users\Peter Rodriguez\OneDrive - ENSOLUM, LLC\Desktop\GIS\File Path Structure\3 - Carlsbad\COG Operating, LLC\03D2024221 - Superman Frac Pond\1 - Project\Superman Frac Pond.aprx

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Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

COG Operating, LLC

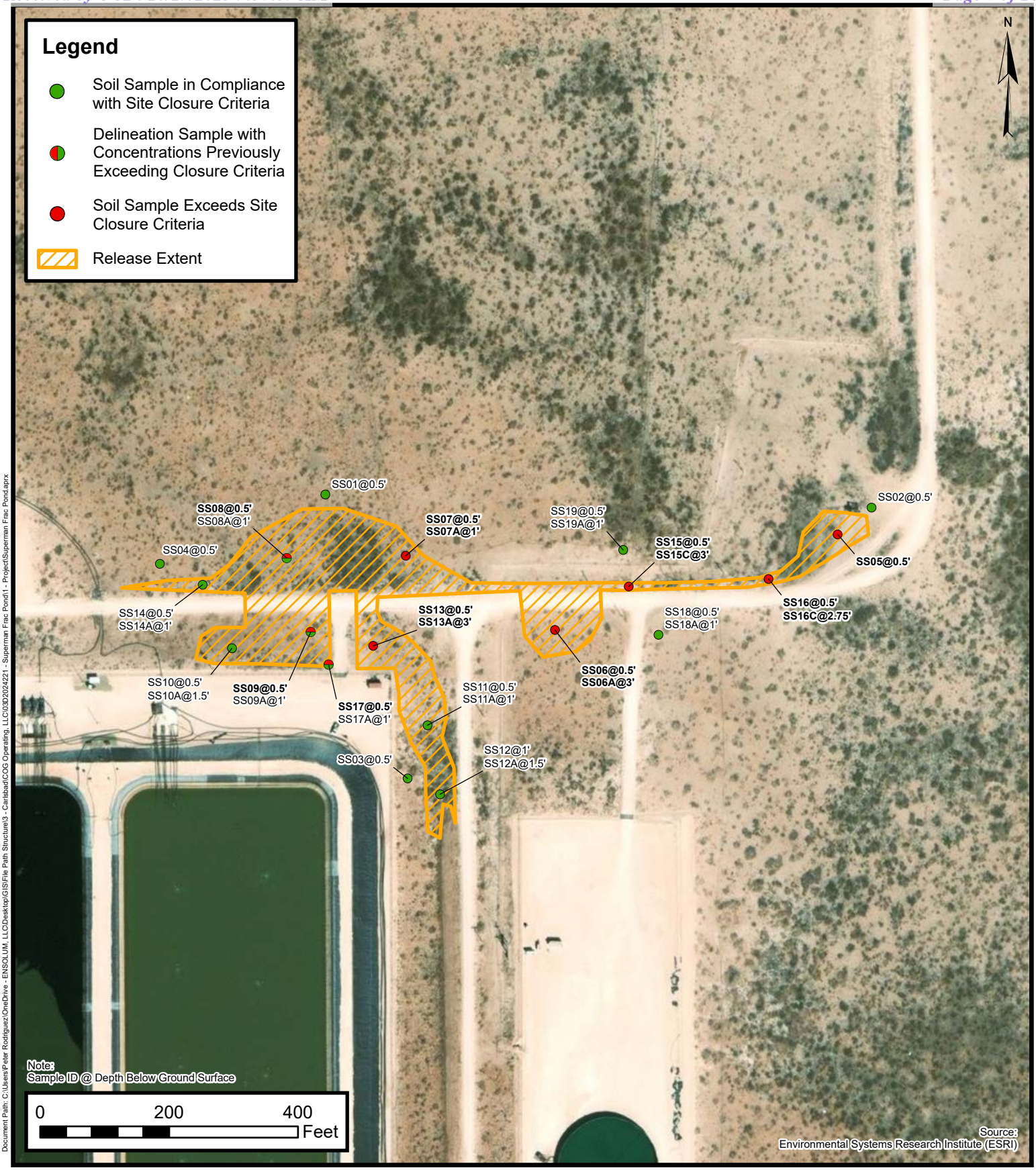
Superman Frac Pond

Incident Number: NAPP2320554259

Unit G, Sec 30, T26S, R32E
Lea County,New Mexico

FIGURE

1



Document Path: C:\Users\Peter Rodriguez\OneDrive - ENSOLUM, LLC\Desktop\GIS\File Path Structure\3 - Carlsbad\COG Operating, LLC\03D2024221 - Superman Frac Pond\1 - Project\Superman Frac Pond.aprx

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Assessment Soil Sample Locations

COG Operating, LLC

Superman Frac Pond

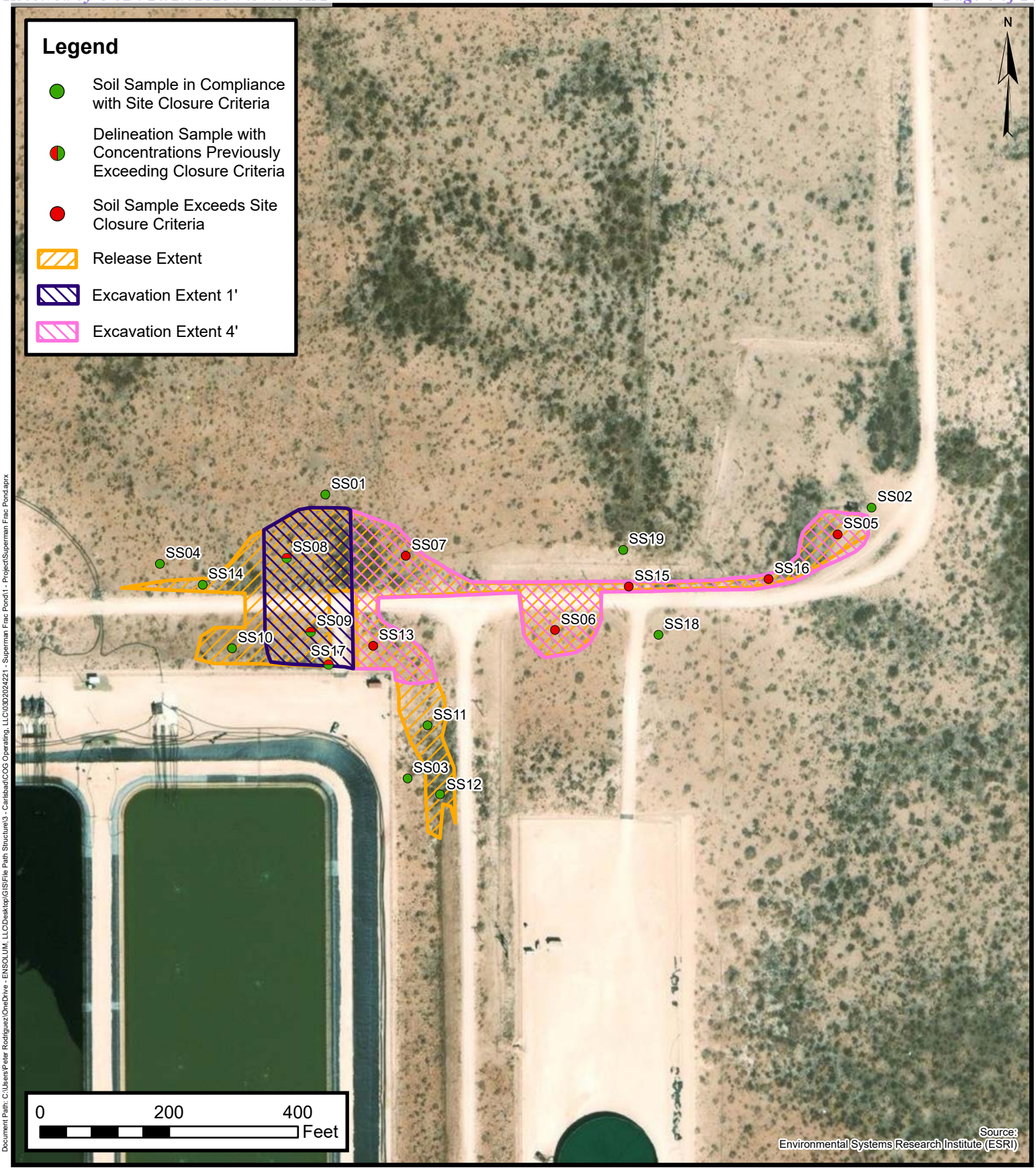
Incident Number: NAPP2320554259

Unit G, Sec 30, T26S, R32E

Lea County,New Mexico

FIGURE

2



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Proposed Excavation Extent

COG Operating, LLC
Superman Frac Pond
Incident Number: NAPP2320554259
Unit G, Sec 30, T26S, R32E
Lea County,New Mexico

FIGURE
3

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TABLES

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TABLE I
SOIL SAMPLE ANALYTICAL RESULTS
Superman Frac Pond
ConocoPhillips Company
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 I Closure Criteria (NMAC 19.15.29)			**10**	**50**	**NE**	**NE**	**NE**	**1,000**	**2,500**	**10,000**
Assessment Soil Samples										
SS01*	08/02/2023	0.5	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	68.5
SS02*	08/02/2023	0.5	<0.00199	<0.00398	<50.1	<50.1	<50.1	<50.1	<50.1	52.3
SS03*	08/02/2023	0.5	<0.00199	<0.00398	<50.4	<50.4	<50.4	<50.4	<50.4	95.5
SS04*	08/02/2023	0.5	<0.00200	<0.00400	<50.5	<50.5	<50.5	<50.5	<50.5	55.8
SS05*	08/02/2023	0.5	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	<49.7	**2,790**
SS06*	08/02/2023	0.5	<0.00202	<0.00403	<49.6	<49.6	<49.6	<49.6	<49.6	**646**
SS06A*	09/08/2023	3	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	<49.9	**1,480**
SS07*	08/02/2023	0.5	<0.00202	<0.00404	<50.2	<50.2	<50.2	<50.2	<50.2	**936**
SS07A*	09/07/2023	1	<0.00198	<0.00396	<50.3	<50.3	<50.3	<50.3	<50.3	**8,250**
SS08*	08/02/2023	0.5	<0.00200	<0.00401	<50.3	<50.3	<50.3	<50.3	<50.3	**728**
SS08A*	09/07/2023	1	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	33.7
SS09*	08/02/2023	0.5	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	<49.8	**3,600**
SS09A*	09/08/2023	1	<0.00199	<0.00398	<50.1	<50.1	<50.1	<50.1	<50.1	192
SS10*	08/02/2023	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	40.4
SS10A*	09/08/2023	1.5	<0.00200	<0.00399	<50.5	<50.5	<50.5	<50.5	<50.5	60.6
SS11*	08/02/2023	0.5	<0.00200	<0.00400	<49.6	<49.6	<49.6	<49.6	<49.6	102
SS11A*	09/08/2023	1	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	37.4
SS12*	09/08/2023	1	<0.00198	<0.00396	<50.5	<50.5	<50.5	<50.5	<50.5	226
SS12A*	09/08/2023	1.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	33.3
SS13*	09/08/2023	0.5	<0.00200	<0.00401	<49.7	<49.7	<49.7	<49.7	<49.7	**3,800**
SS13A*	09/08/2023	3	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	**4,440**
SS14*	09/08/2023	0.5	<0.00199	<0.00398	<50.2	<50.2	<50.2	<50.2	<50.2	52.1
SS14A*	09/08/2023	1	<0.00199	<0.00398	<50.5	<50.5	<50.5	<50.5	<50.5	56.7

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TABLE I
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Superman Frac Pond
ConocoPhillips Company
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 I Closure Criteria (NMAC 19.15.29)			**10**	**50**	**NE**	**NE**	**NE**	**1,000**	**2,500**	**10,000**
SS15*	09/08/2023	0.5	<0.00199	<0.00398	<49.6	<49.6	<49.6	<49.6	<49.6	**2,220**
SS15C*	09/08/2023	3	<0.00201	<0.00402	<49.7	<49.7	<49.7	<49.7	<49.7	**6,300**
SS16*	09/08/2023	0.5	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	<49.7	**712**
SS16C*	09/08/2023	2.75	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	**3,000**
SS17*	09/08/2023	0.5	<0.00201	<0.00402	<49.7	<49.7	<49.7	<49.7	<49.7	**883**
SS17A*	09/08/2023	1	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	<49.8	58.7
SS18*	09/08/2023	0.5	<0.00200	<0.00401	<49.5	<49.5	<49.5	<49.5	<49.5	120
SS18A*	09/08/2023	1	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	<50.3	65.7
SS19*	09/08/2023	0.5	<0.00199	<0.00398	<50.1	<50.1	<50.1	<50.1	<50.1	48.7
SS19A*	09/08/2023	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	35.4

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NE: Not Esablished

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

** indicates sample was collected in area to be reclaimed after remediation is complete; reclamation standard in the top 4 feet is 600 mg/kg for chloride and 100 mg/kg for TPH.*

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APPENDIX A

Referenced Well Records

212C-MD-01867	TETRA TECH	**LOG OF BORING BH-1**	Page 1 of 3

Project Name: Golden Spur to Wilder Federal Pipeline Release

Borehole Location: GPS: N 32.020165° E -103.704807° | Surface Elevation: 3155 ft

Borehole Number: BH-1 | Borehole Diameter (in.): 8 | Date Started: 10/7/2019 | Date Finished: 10/7/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
				10								**-SM-** SILTY SAND; Brown, medium dense, with no hydrocarbon odor, with no staining.		BH-1 (0'-1')
			3690	2.1										BH-1 (2'-3')
5			3300	1.1										BH-1 (4'-5')
													5.5	
				1.2								**-SM-** SILTY SAND; Tan, loose to medium dense, with intermittent gravel, with no hydrocarbon odor, with no staining.		BH-1 (6'-7')
10			2340	1.1										BH-1 (9'-10')
15				0.8										BH-1 (14'-15')
20			3010	0.9										BH-1 (19'-20')
													22	
												-SM- SILTY SAND; Tan, medium dense, with no hydrocarbon odor, with no staining.		
25			2400	0.9										BH-1 (24'-25')

Sampler Types: Split Spoon, Shelby, Bulk Sample, Grab Sample, Acetate Liner, Vane Shear, California, Test Pit

Operation Types: Mud Rotary, Continuous Flight Auger, Wash Rotary, Auger, Air Rotary, Core Barrel, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01867	TETRA TECH	**LOG OF BORING BH-1**	Page 2 of 3

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WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
30			1970											BH-1 (29'-30')
35														BH-1 (34'-35')
													37	
												-SM- SILTY SAND; Brown, medium dense, with no hydrocarbon odor, with no staining.		
40			2640											BH-1 (39'-40')
45														BH-1 (44'-45')
50			1990											BH-1 (44'-45')

Sampler Types: Split Spoon, Shelby, Bulk Sample, Grab Sample, Acetate Liner, Vane Shear, California, Test Pit

Operation Types: Mud Rotary, Continuous Flight Auger, Wash Rotary, Auger, Air Rotary, Core Barrel, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01867 | TETRA TECH | **LOG OF BORING BH-1** | Page 3 of 3

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WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
55			3110											BH-1 (54'-55')
													57	
												-SP- SAND: Tan, loose, with no hydrocarbon odor, with no staining.		
60			419										60	BH-1 (59'-60')

Bottom of borehole at 60.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL

2013 OCT 30 P 12:37

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): C-3595	OSE FILE NUMBER(S): C-3595
WELL OWNER NAME(S): Oliver D Kiehne	PHONE (OPTIONAL): 432-448-6337
WELL OWNER MAILING ADDRESS: P.O. Box 135	CITY: Orla STATE: Tx ZIP: 79770

WELL LOCATION (FROM GPS): DEGREES / MINUTES / SECONDS

LATITUDE: 32 01 32.61 N

LONGITUDE: 103 40 56.71 W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE: CR 1 South to Battle Axe Rd – 3 miles east

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1654	John Sieman	Sieman Drilling & Const. LLC

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
9/30/13	9/30/13	280'	280'	180'-0

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 60'-0

DRILLING FLUID: ☐ AIR ☑ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	200	10"	PVC	Certa Lok	6"	DR-17	Blank
200	240	10"	PVC	Certa Lok	6"	DR-17	.032 Screen
240	280	10	PVC	Certa Lok	6"	DR-17	Blank

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	20	10	3/8 hole plug Bentonite	6 sacks	gravity
40	280	10	3/8 pea gravel	4 yds	gravity

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
C-3595		517513

LOCATION: EXPL.

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	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)
0	35	35	White Caliche	☐Y ☒N	
35	160	125	Brown SAND	☐Y ☒N	
160	200	40	Brown Sandstone	☒Y ☐N	3-5
200	280	80	Red clay & g-ave/mix Redbed	☐Y ☒N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
	280			☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	
				☐Y ☐N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ☒PUMP ☐AIR LIFT ☐BAILER ☐OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 3-5

STATE ENGINEER OFFICE RECEIVED OCT 18 2013

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:

none

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

none

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

John Sherman — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

10/2/13 — DATE

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	C-3595	POD NUMBER	1	TRN NUMBER	517513

LOCATION

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for New Mexico

Click to hide state-specific text

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 320134103384101

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 320134103384101 26S.32E.21.32311

Lea County, New Mexico
Latitude 32°01'35.2", Longitude 103°41'01.8" NAD83
Land-surface elevation 3,130 feet above NAVD88
The depth of the well is 405 feet below land surface.
The depth of the hole is 405 feet below land surface.
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.
This well is completed in the Dockum Group (231DCKM) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source measur
1993-06-16		D	62610		2723.41	NGVD29	1	L		
1993-06-16		D	62611		2725.00	NAVD88	1	L		
1993-06-16		D	72019	405.00			1	L		
2013-01-16	19:10 UTC	m	62610		2906.47	NGVD29	P	S	USGS	
2013-01-16	19:10 UTC	m	62611		2908.06	NAVD88	P	S	USGS	
2013-01-16	19:10 UTC	m	72019	221.94			P	S	USGS	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Parameter code	62610	Groundwater level above NGVD 1929, feet

Section	Code	Description
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	L	Interpreted from geophysical logs.
Method of measurement	S	Steel-tape measurement.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Questions or Comments
Automated retrievals
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U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for New Mexico: Water Levels
URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico Water Data Maintainer
Page Last Modified: 2023-07-03 15:49:19 EDT
0.31 0.25 nadww02

ENSOLUM

APPENDIX B

Photographic Log

ENSOLUM

Photographic Log
ConocoPhillips Company
Superman Frac Pond
NAPP2320554259

Photograph: 1 Date: 7/13/2023
Description: Initial release
View: North

Photograph: 2 Date: 8/2/2023
Description: Dead vegetation in release footprint
View: Southeast

Photograph: 3 Date: 9/8/2023
Description: Delineation activities
View: Northeast

Photograph: 4 Date: 9/7/2023
Description: Delineation activities
View: North

ENSOLUM

APPENDIX C

Lithologic Soil Sampling Logs

ENSOLUM

	Sample Name: SS05	Date: 8/2/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.016264,-103.713351	Hole Diameter: 4"	Total Depth: 0.5'

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. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	8,596	0.0	N	SS05	0.5	0 1 2 3 4 5 6 7 8 9 10 11 12	SP-SM	Sand: Greyish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche TD at 0.5 feet bgs

ENSOLUM

	Sample Name: SS06	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.015871,-103.714772	Hole Diameter: 4"	Total Depth: 1.5'

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. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	1,629	0.0	N	SS06	0.5	0	SP-SM	Sand: Greyish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche
Dry	2,620	0.0	N			1	SP-SM	SAA (same as above)
Dry	1,500	0.0	N	SS06A	1.5	2	SP-SM	SAA TD (refusal) at 1.5 feet bgs
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: SS07	Date: 9/7/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.016194,-103.715514	Hole Diameter: 4"	Total Depth: 1.75'

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. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Damp	1,036	0.0	N	SS07	0.5	0	SP-SM	Sand: Brown, dark brown, medium to fine grain, poorly sorted, abundant coarse caliche
Damp	8,534	0.0	N			1	SP-SM	SAA (same as above)
Damp	10,007	0.0	N	SS07A	1.75	2	SP-SM	SAA TD (refusal) at 1.75 feet bgs
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM	Sample Name: SS08	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.016191,-103.716111	Hole Diameter: 4"	Total Depth: 1.0'

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. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	795	0.0	N	SS06	0.5	0	SP-SM	Sand: Greyish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche
Dry	1,310	0.0	N	SS06A	1	1	SP-SM	SAA (same as above)
								TD (refusal) at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: SS09	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.015874,-103.715995	Hole Diameter: 4"	Total Depth: 1.0'

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. 40% correction factor included. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	6,820	0.0	N	SS09	0.5	0	SP-SM	Sand: Greyish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche
Dry	ND	0.0	N	SS09A	1	1	SP-SM	SAA (same as above)
								TD at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM	Sample Name: SS10	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.015809,-103.716389	Hole Diameter: 4"	Total Depth: 1.0'

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. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	ND	0.0	N	SS10	0.5	0	SP-SM	Sand: Reddish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche
Dry	ND	0.0	N	SS10A	1	1	SP-SM	SAA (same as above)
								TD at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM	Sample Name: SS11	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.015470,-103.715415	Hole Diameter: 4"	Total Depth: 1.0'

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. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	ND	0.0	N	SS11	0.5	0	SP-SM	Sand: Reddish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche
Dry	ND	0.0	N	SS11A	1	1	SP-SM	SAA (same as above)
								TD at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM	Sample Name: SS12	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.015175,-103.715357	Hole Diameter: 4"	Total Depth: 1.0'

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. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	ND	0.0	N	SS12	0.5	0	SP-SM	Sand: Grayish brown, brown, medium to fine grain, poorly sorted, some coarse caliche
Dry	ND	0.0	N	SS12A	1	1	SP-SM	SAA (same as above)
								TD at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: SS13	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.015812,-103.715683	Hole Diameter: 4"	Total Depth: 1.0'

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. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	9,240	0.0	N	SS13	0.5	0	SP-SM	Sand: Greyish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche
Dry	3,516	0.0	N	SS13A	1	1	SP-SM	SAA (same as above)
								TD (refusal) at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM	Sample Name: SS14	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.016081,-103.716533	Hole Diameter: 4"	Total Depth: 1.0'

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. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	ND	0.0	N	SS14	0.5	0	SP-SM	Sand: Grayish brown, brown, medium to fine grain, poorly sorted, some coarse caliche
Dry	ND	0.0	N	SS14A	1	1	SP-SM	SAA (same as above)
								TD at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: SS15	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.016052,-103.714400	Hole Diameter: 4"	Total Depth: 3.0'

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. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
Dry	2,620	0.0	N	SS15	0.5		SP-SM	Sand: Greyish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche
Dry	3,516	0.0	N			1	SP-SM	SAA (same as above)
Damp	7,840	0.0	N			2	SP-SM	SAA, dark tan sand
Damp	7,285	0.0	N	SS15C	3	3	SP-SM	SAA TD (refusal) at 3 feet bgs
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: SS16	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.016201,-103.713400	Hole Diameter: 4"	Total Depth: 2.75'

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. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
Dry	739	0.0	N	SS16	0.5		SP-SM	Sand: Greyish brown, brown, medium to fine grain, poorly sorted, abundant coarse caliche
Dry	1,030	0.0	N			1	SP-SM	SAA (same as above)
Damp	3,024	0.0	N			2	SP-SM	SAA, dark tan sand
Damp	3,024	0.0	N	SS16C	2.75	3	SP-SM	SAA TD (refusal) at 2.75 feet bgs
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: SS17	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.015735,-103.715907	Hole Diameter: 4"	Total Depth: 1.0'

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. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	ND	0.0	N	SS17	0.5	0	CHHE	Caliche: light tan, off white, large coarse gravel, some grey sand
Dry	ND	0.0	N	SS17A	1	1	CHHE	SAA (same as above) increased sand
								TD at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM	Sample Name: SS18	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.015845,-103.714254	Hole Diameter: 4"	Total Depth: 1.0'

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. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	ND	0.0	N	SS18	0.5	0	SP-SM	Sand: Reddish brown, brown, medium to fine grain, poorly sorted, some coarse caliche
Dry	ND	0.0	N	SS18A	1	1	SP-SM	SAA (same as above)
								TD at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: SS19	Date: 9/8/2023
	Site Name: Superman Frac Pond	
	Incident Number: NAPP2320554259	
	Job Number: 03D2024221	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Hand Auger
Coordinates: 32.016208,-103.714425	Hole Diameter: 4"	Total Depth: 1.0'

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. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	ND	0.0	N	SS19	0.5	0	SP-SM	Sand: Reddish brown, brown, medium to fine grain, poorly sorted, some coarse caliche
Dry	ND	0.0	N	SS19A	1	1	SP-SM	SAA (same as above)
								TD at 1.0 foot bgs
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 8/18/2023 9:58:58 AM

JOB DESCRIPTION

Superman Frac Pond
SDG NUMBER 03D2024221

JOB NUMBER

890-5035-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

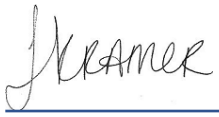
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



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Client: Ensolum
Project/Site: Superman Frac Pond

Laboratory Job ID: 890-5035-1
SDG: 03D2024221

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Definitions/Glossary

Client: Ensolum Job ID: 890-5035-1
Project/Site: Superman Frac Pond SDG: 03D2024221

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Job ID: 890-5035-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-5035-1

Receipt
The samples were received on 8/4/2023 11:23 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-5035-1), SS02 (890-5035-2), SS03 (890-5035-3), SS04 (890-5035-4), SS05 (890-5035-5), SS06 (890-5035-6), SS07 (890-5035-7), SS08 (890-5035-8), SS09 (890-5035-9), SS10 (890-5035-10) and SS11 (890-5035-11).

GC VOA
Method 8021B: The continuing calibration verification (CCV) associated with batch 880-60006 recovered below the lower control limit for o-Xylene. An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated samples are impacted: (CCV 880-60006/2) and (CCV 880-60006/33).

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: (MB 880-60317/1-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: SS03 (890-5035-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS07 (890-5035-7), SS08 (890-5035-8) and SS09 (890-5035-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-60422/20), (CCV 880-60422/31), (CCV 880-60422/5), (LCS 880-60317/2-A) and (LCSD 880-60317/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The continuing calibration verification (CCV) associated with batch 880-60422 recovered below the lower control limit for Diesel Range Organics (Over C10-C28). An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-60422/31).

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-59457 and analytical batch 880-59519 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-59363 and 880-59363 and analytical batch 880-59623 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS01

Lab Sample ID: 890-5035-1
Matrix: Solid
Date Collected: 08/02/23 11:10
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 11:03	1
Toluene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 11:03	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 11:03	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		08/12/23 14:43	08/13/23 11:03	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 11:03	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		08/12/23 14:43	08/13/23 11:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*08/12/23 14:43*	*08/13/23 11:03*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*08/12/23 14:43*	*08/13/23 11:03*	*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			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3		mg/Kg			08/18/23 10:45	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	<50.3	U	50.3		mg/Kg		08/15/23 16:33	08/17/23 13:30	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3		mg/Kg		08/15/23 16:33	08/17/23 13:30	1
OII Range Organics (Over C28-C36)	<50.3	U	50.3		mg/Kg		08/15/23 16:33	08/17/23 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*123*		*70 - 130*	*08/15/23 16:33*	*08/17/23 13:30*	*1*
o-Terphenyl	*99*		*70 - 130*	*08/15/23 16:33*	*08/17/23 13:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**68.5**		4.95		mg/Kg			08/09/23 04:12	1

Client Sample ID: SS02

Lab Sample ID: 890-5035-2
Matrix: Solid
Date Collected: 08/02/23 11:15
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 13:14	1
Toluene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 13:14	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 13:14	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		08/12/23 14:43	08/13/23 13:14	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 13:14	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		08/12/23 14:43	08/13/23 13:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*	*08/12/23 14:43*	*08/13/23 13:14*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS02

Lab Sample ID: 890-5035-2
Matrix: Solid
Date Collected: 08/02/23 11:15
Date Received: 08/04/23 11:23
Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*08/12/23 14:43*	*08/13/23 13:14*	*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			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1	mg/Kg			08/18/23 10:45	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	<50.1	U	50.1	mg/Kg		08/15/23 16:33	08/17/23 14:36	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		08/15/23 16:33	08/17/23 14:36	1
OII Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		08/15/23 16:33	08/17/23 14:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*120*		*70 - 130*	*08/15/23 16:33*	*08/17/23 14:36*	*1*
o-Terphenyl	*100*		*70 - 130*	*08/15/23 16:33*	*08/17/23 14:36*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**52.3**		5.01	mg/Kg			08/09/23 04:19	1

Client Sample ID: SS03

Lab Sample ID: 890-5035-3
Matrix: Solid
Date Collected: 08/02/23 11:20
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 13:35	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/12/23 14:43	08/13/23 13:35	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/12/23 14:43	08/13/23 13:35	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/12/23 14:43	08/13/23 13:35	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		08/12/23 14:43	08/13/23 13:35	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/12/23 14:43	08/13/23 13:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*	*08/12/23 14:43*	*08/13/23 13:35*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*08/12/23 14:43*	*08/13/23 13:35*	*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			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4	mg/Kg			08/18/23 10:45	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS03

Lab Sample ID: 890-5035-3
Matrix: Solid
Date Collected: 08/02/23 11:20
Date Received: 08/04/23 11:23
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	<50.4	U	50.4		mg/Kg		08/15/23 16:33	08/17/23 14:58	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4		mg/Kg		08/15/23 16:33	08/17/23 14:58	1
OII Range Organics (Over C28-C36)	<50.4	U	50.4		mg/Kg		08/15/23 16:33	08/17/23 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*131*	*S1+*	*70 - 130*	*08/15/23 16:33*	*08/17/23 14:58*	*1*
o-Terphenyl	*107*		*70 - 130*	*08/15/23 16:33*	*08/17/23 14:58*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**95.5**		4.97		mg/Kg			08/09/23 04:40	1

Client Sample ID: SS04

Lab Sample ID: 890-5035-4
Matrix: Solid
Date Collected: 08/02/23 11:25
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 13:55	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 13:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 13:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/12/23 14:43	08/13/23 13:55	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 13:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/12/23 14:43	08/13/23 13:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*	*08/12/23 14:43*	*08/13/23 13:55*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*08/12/23 14:43*	*08/13/23 13:55*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5		mg/Kg			08/18/23 10:45	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	<50.5	U	50.5		mg/Kg		08/15/23 16:33	08/17/23 15:20	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5		mg/Kg		08/15/23 16:33	08/17/23 15:20	1
OII Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		08/15/23 16:33	08/17/23 15:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*125*		*70 - 130*	*08/15/23 16:33*	*08/17/23 15:20*	*1*
o-Terphenyl	*105*		*70 - 130*	*08/15/23 16:33*	*08/17/23 15:20*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS04

Lab Sample ID: 890-5035-4
Matrix: Solid
Date Collected: 08/02/23 11:25
Date Received: 08/04/23 11:23
Sample Depth: 0.5

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	55.8		4.95		mg/Kg			08/09/23 04:47	1

Client Sample ID: SS05

Lab Sample ID: 890-5035-5
Matrix: Solid
Date Collected: 08/02/23 11:30
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 14:16	1
Toluene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 14:16	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 14:16	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		08/12/23 14:43	08/13/23 14:16	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 14:16	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		08/12/23 14:43	08/13/23 14:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*08/12/23 14:43*	*08/13/23 14:16*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*08/12/23 14:43*	*08/13/23 14:16*	*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			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			08/18/23 10:45	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	<49.7	U	49.7		mg/Kg		08/15/23 16:33	08/17/23 15:42	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		08/15/23 16:33	08/17/23 15:42	1
OII Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		08/15/23 16:33	08/17/23 15:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*08/15/23 16:33*	*08/17/23 15:42*	*1*
o-Terphenyl	*100*		*70 - 130*	*08/15/23 16:33*	*08/17/23 15:42*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2790		24.8		mg/Kg			08/09/23 04:53	5

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS06

Lab Sample ID: 890-5035-6
Matrix: Solid
Date Collected: 08/02/23 11:35
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 14:36	1
Toluene	<0.00202	U	0.00202		mg/Kg		08/12/23 14:43	08/13/23 14:36	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		08/12/23 14:43	08/13/23 14:36	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		08/12/23 14:43	08/13/23 14:36	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		08/12/23 14:43	08/13/23 14:36	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		08/12/23 14:43	08/13/23 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*	*08/12/23 14:43*	*08/13/23 14:36*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*08/12/23 14:43*	*08/13/23 14:36*	*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			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			08/18/23 10:45	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	<49.6	U	49.6		mg/Kg		08/15/23 16:33	08/17/23 16:04	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		08/15/23 16:33	08/17/23 16:04	1
OII Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		08/15/23 16:33	08/17/23 16:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*124*		*70 - 130*	*08/15/23 16:33*	*08/17/23 16:04*	*1*
o-Terphenyl	*102*		*70 - 130*	*08/15/23 16:33*	*08/17/23 16:04*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**646**		5.01		mg/Kg			08/09/23 05:00	1

Client Sample ID: SS07

Lab Sample ID: 890-5035-7
Matrix: Solid
Date Collected: 08/02/23 11:40
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 14:57	1
Toluene	<0.00202	U	0.00202		mg/Kg		08/12/23 14:43	08/13/23 14:57	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		08/12/23 14:43	08/13/23 14:57	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		08/12/23 14:43	08/13/23 14:57	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		08/12/23 14:43	08/13/23 14:57	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		08/12/23 14:43	08/13/23 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*08/12/23 14:43*	*08/13/23 14:57*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS07

Lab Sample ID: 890-5035-7
Matrix: Solid
Date Collected: 08/02/23 11:40
Date Received: 08/04/23 11:23
Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*08/12/23 14:43*	*08/13/23 14:57*	*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			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2	mg/Kg			08/18/23 10:45	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	<50.2	U	50.2	mg/Kg		08/15/23 16:33	08/17/23 16:26	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		08/15/23 16:33	08/17/23 16:26	1
OII Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		08/15/23 16:33	08/17/23 16:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*146*	*S1+*	*70 - 130*	*08/15/23 16:33*	*08/17/23 16:26*	*1*
o-Terphenyl	*121*		*70 - 130*	*08/15/23 16:33*	*08/17/23 16:26*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**936**		5.05	mg/Kg			08/09/23 05:07	1

Client Sample ID: SS08

Lab Sample ID: 890-5035-8
Matrix: Solid
Date Collected: 08/02/23 11:45
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 15:17	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/12/23 14:43	08/13/23 15:17	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/12/23 14:43	08/13/23 15:17	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		08/12/23 14:43	08/13/23 15:17	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/12/23 14:43	08/13/23 15:17	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		08/12/23 14:43	08/13/23 15:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*08/12/23 14:43*	*08/13/23 15:17*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*08/12/23 14:43*	*08/13/23 15:17*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			08/18/23 10:45	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS08

Lab Sample ID: 890-5035-8
Matrix: Solid
Date Collected: 08/02/23 11:45
Date Received: 08/04/23 11:23
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	<50.3	U	50.3		mg/Kg		08/15/23 16:33	08/17/23 16:48	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3		mg/Kg		08/15/23 16:33	08/17/23 16:48	1
OII Range Organics (Over C28-C36)	<50.3	U	50.3		mg/Kg		08/15/23 16:33	08/17/23 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*135*	*S1+*	*70 - 130*	*08/15/23 16:33*	*08/17/23 16:48*	*1*
o-Terphenyl	*109*		*70 - 130*	*08/15/23 16:33*	*08/17/23 16:48*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**728**		4.98		mg/Kg			08/09/23 05:14	1

Client Sample ID: SS09

Lab Sample ID: 890-5035-9
Matrix: Solid
Date Collected: 08/02/23 11:50
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 15:37	1
Toluene	<0.00198	U	0.00198		mg/Kg		08/12/23 14:43	08/13/23 15:37	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		08/12/23 14:43	08/13/23 15:37	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		08/12/23 14:43	08/13/23 15:37	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		08/12/23 14:43	08/13/23 15:37	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		08/12/23 14:43	08/13/23 15:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*	*08/12/23 14:43*	*08/13/23 15:37*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*08/12/23 14:43*	*08/13/23 15:37*	*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			08/14/23 11:31	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			08/18/23 10:45	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		08/15/23 16:33	08/17/23 17:10	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		08/15/23 16:33	08/17/23 17:10	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		08/15/23 16:33	08/17/23 17:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*138*	*S1+*	*70 - 130*	*08/15/23 16:33*	*08/17/23 17:10*	*1*
o-Terphenyl	*114*		*70 - 130*	*08/15/23 16:33*	*08/17/23 17:10*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS09

Lab Sample ID: 890-5035-9
Matrix: Solid
Date Collected: 08/02/23 11:50
Date Received: 08/04/23 11:23
Sample Depth: 0.5

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3600		24.8		mg/Kg			08/09/23 05:21	5

Client Sample ID: SS10

Lab Sample ID: 890-5035-10
Matrix: Solid
Date Collected: 08/02/23 11:55
Date Received: 08/04/23 11:23
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		08/12/23 14:43	08/13/23 15:58	1
Toluene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 15:58	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 15:58	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		08/12/23 14:43	08/13/23 15:58	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		08/12/23 14:43	08/13/23 15:58	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		08/12/23 14:43	08/13/23 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*08/12/23 14:43*	*08/13/23 15:58*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*08/12/23 14:43*	*08/13/23 15:58*	*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			08/14/23 11:31	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			08/18/23 10:45	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		08/15/23 16:33	08/17/23 17:32	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/15/23 16:33	08/17/23 17:32	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/15/23 16:33	08/17/23 17:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*117*		*70 - 130*	*08/15/23 16:33*	*08/17/23 17:32*	*1*
o-Terphenyl	*95*		*70 - 130*	*08/15/23 16:33*	*08/17/23 17:32*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40.4		4.99		mg/Kg			08/08/23 15:26	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS11

Date Collected: 08/02/23 12:00
Date Received: 08/04/23 11:23
Sample Depth: 0.5

Lab Sample ID: 890-5035-11

Matrix: Solid

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		08/12/23 14:43	08/13/23 16:19	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 16:19	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 16:19	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/12/23 14:43	08/13/23 16:19	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 16:19	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/12/23 14:43	08/13/23 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*08/12/23 14:43*	*08/13/23 16:19*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*08/12/23 14:43*	*08/13/23 16:19*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			08/14/23 11:31	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			08/18/23 10:45	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	<49.6	U	49.6		mg/Kg		08/15/23 16:33	08/17/23 18:16	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		08/15/23 16:33	08/17/23 18:16	1
OII Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		08/15/23 16:33	08/17/23 18:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*119*		*70 - 130*	*08/15/23 16:33*	*08/17/23 18:16*	*1*
o-Terphenyl	*96*		*70 - 130*	*08/15/23 16:33*	*08/17/23 18:16*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**102**		5.01		mg/Kg			08/08/23 15:33	1

Surrogate Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-31964-A-1-C MS	Matrix Spike	94	97
880-31964-A-1-D MSD	Matrix Spike Duplicate	96	99
890-5035-1	SS01	94	94
890-5035-2	SS02	81	90
890-5035-3	SS03	80	98
890-5035-4	SS04	83	98
890-5035-5	SS05	85	98
890-5035-6	SS06	80	98
890-5035-7	SS07	93	95
890-5035-8	SS08	92	99
890-5035-9	SS09	90	98
890-5035-10	SS10	93	99
890-5035-11	SS11	87	97
LCS 880-60009/1-A	Lab Control Sample	90	96
LCSD 880-60009/2-A	Lab Control Sample Dup	89	95
MB 880-60006/8	Method Blank	94	126
MB 880-60009/5-A	Method Blank	94	115

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-5035-1	SS01	123	99
890-5035-1 MS	SS01	123	90
890-5035-1 MSD	SS01	128	93
890-5035-2	SS02	120	100
890-5035-3	SS03	131 S1+	107
890-5035-4	SS04	125	105
890-5035-5	SS05	122	100
890-5035-6	SS06	124	102
890-5035-7	SS07	146 S1+	121
890-5035-8	SS08	135 S1+	109
890-5035-9	SS09	138 S1+	114
890-5035-10	SS10	117	95
890-5035-11	SS11	119	96
LCS 880-60317/2-A	Lab Control Sample	132 S1+	110
LCSD 880-60317/3-A	Lab Control Sample Dup	143 S1+	119
MB 880-60317/1-A	Method Blank	149 S1+	121

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-60006/8
Matrix: Solid
Analysis Batch: 60006

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			08/12/23 20:15	1
Toluene	<0.00200	U	0.00200		mg/Kg			08/12/23 20:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg			08/12/23 20:15	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg			08/12/23 20:15	1
o-Xylene	<0.00200	U	0.00200		mg/Kg			08/12/23 20:15	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg			08/12/23 20:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*08/12/23 20:15*	*1*
1,4-Difluorobenzene (Surr)	*126*		*70 - 130*		*08/12/23 20:15*	*1*

Lab Sample ID: MB 880-60009/5-A
Matrix: Solid
Analysis Batch: 60006

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 60009

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 07:51	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 07:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 07:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/12/23 14:43	08/13/23 07:51	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/12/23 14:43	08/13/23 07:51	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/12/23 14:43	08/13/23 07:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*08/12/23 14:43*	*08/13/23 07:51*	*1*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*08/12/23 14:43*	*08/13/23 07:51*	*1*

Lab Sample ID: LCS 880-60009/1-A
Matrix: Solid
Analysis Batch: 60006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 60009

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09640		mg/Kg		96	70 - 130		
Toluene			0.100	0.09234		mg/Kg		92	70 - 130		
Ethylbenzene			0.100	0.08132		mg/Kg		81	70 - 130		
m-Xylene & p-Xylene			0.200	0.1824		mg/Kg		91	70 - 130		
o-Xylene			0.100	0.08780		mg/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: LCSD 880-60009/2-A
Matrix: Solid
Analysis Batch: 60006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 60009

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09444		mg/Kg		94	70 - 130	2	35

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QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

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

Lab Sample ID: LCSD 880-60009/2-A
Matrix: Solid
Analysis Batch: 60006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 60009

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.09421		mg/Kg		94	70 - 130	2	35
Ethylbenzene			0.100	0.08645		mg/Kg		86	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1808		mg/Kg		90	70 - 130	1	35
o-Xylene			0.100	0.08595		mg/Kg		86	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: 880-31964-A-1-C MS
Matrix: Solid
Analysis Batch: 60006

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 60009

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00198	U	0.0996	0.09858		mg/Kg		99	70 - 130
Toluene	<0.00198	U	0.0996	0.09388		mg/Kg		94	70 - 130
Ethylbenzene	<0.00198	U	0.0996	0.08617		mg/Kg		87	70 - 130
m-Xylene & p-Xylene	<0.00396	U	0.199	0.1902		mg/Kg		95	70 - 130
o-Xylene	<0.00198	U	0.0996	0.09140		mg/Kg		91	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: 880-31964-A-1-D MSD
Matrix: Solid
Analysis Batch: 60006

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 60009

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.100	0.1071		mg/Kg		107	70 - 130	8	35
Toluene	<0.00198	U	0.100	0.09043		mg/Kg		90	70 - 130	4	35
Ethylbenzene	<0.00198	U	0.100	0.08945		mg/Kg		89	70 - 130	4	35
m-Xylene & p-Xylene	<0.00396	U	0.200	0.1865		mg/Kg		93	70 - 130	2	35
o-Xylene	<0.00198	U	0.100	0.08991		mg/Kg		89	70 - 130	2	35

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

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

Lab Sample ID: MB 880-60317/1-A
Matrix: Solid
Analysis Batch: 60422

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 60317

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		08/15/23 16:33	08/17/23 10:56	1

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QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

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

Lab Sample ID: MB 880-60317/1-A
Matrix: Solid
Analysis Batch: 60422

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 60317

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		08/15/23 16:33	08/17/23 10:56	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/15/23 16:33	08/17/23 10:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*149*	*S1+*	*70 - 130*	*08/15/23 16:33*	*08/17/23 10:56*	*1*
o-Terphenyl	*121*		*70 - 130*	*08/15/23 16:33*	*08/17/23 10:56*	*1*

Lab Sample ID: LCS 880-60317/2-A
Matrix: Solid
Analysis Batch: 60422

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 60317

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	939.2		mg/Kg		94	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	943.8		mg/Kg		94	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*132*	*S1+*	*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: LCSD 880-60317/3-A
Matrix: Solid
Analysis Batch: 60422

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 60317

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	889.1		mg/Kg		89	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	909.6		mg/Kg		91	70 - 130	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*143*	*S1+*	*70 - 130*
o-Terphenyl	*119*		*70 - 130*

Lab Sample ID: 890-5035-1 MS
Matrix: Solid
Analysis Batch: 60422

Client Sample ID: SS01
Prep Type: Total/NA
Prep Batch: 60317

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	998	901.9		mg/Kg		87	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.3	U	998	1008		mg/Kg		101	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*123*		*70 - 130*
o-Terphenyl	*90*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

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

Lab Sample ID: 890-5035-1 MSD
Matrix: Solid
Analysis Batch: 60422

Client Sample ID: SS01
Prep Type: Total/NA
Prep Batch: 60317

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	<50.3	U	998	888.7		mg/Kg		85	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.3	U	998	1042		mg/Kg		104	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*128*		*70 - 130*
o-Terphenyl	*93*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-59457/1-A
Matrix: Solid
Analysis Batch: 59519

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			08/08/23 13:57	1

Lab Sample ID: LCS 880-59457/2-A
Matrix: Solid
Analysis Batch: 59519

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	241.5		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-59457/3-A
Matrix: Solid
Analysis Batch: 59519

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	239.9		mg/Kg		96	90 - 110	1	20

Lab Sample ID: 880-31722-A-1-G MS
Matrix: Solid
Analysis Batch: 59519

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	232	F1	248	406.9	F1	mg/Kg		71	90 - 110		

Lab Sample ID: 880-31722-A-1-H MSD
Matrix: Solid
Analysis Batch: 59519

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	232	F1	248	408.3	F1	mg/Kg		71	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-59363/1-A
Matrix: Solid
Analysis Batch: 59623

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			08/09/23 01:55	1

Lab Sample ID: LCS 880-59363/2-A
Matrix: Solid
Analysis Batch: 59623

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	243.7		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-59363/3-A
Matrix: Solid
Analysis Batch: 59623

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	243.6		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 890-5034-A-1-B MS
Matrix: Solid
Analysis Batch: 59623

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	1530	F1	1250	2532	F1	mg/Kg		80	90 - 110		

Lab Sample ID: 890-5034-A-1-C MSD
Matrix: Solid
Analysis Batch: 59623

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	1530	F1	1250	2535	F1	mg/Kg		80	90 - 110	0	20

Lab Sample ID: 890-5034-A-11-B MS
Matrix: Solid
Analysis Batch: 59623

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	427		250	657.1		mg/Kg		92	90 - 110		

Lab Sample ID: 890-5034-A-11-C MSD
Matrix: Solid
Analysis Batch: 59623

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	427		250	652.0		mg/Kg		90	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

GC VOA

Analysis Batch: 60006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-1	SS01	Total/NA	Solid	8021B	60009
890-5035-2	SS02	Total/NA	Solid	8021B	60009
890-5035-3	SS03	Total/NA	Solid	8021B	60009
890-5035-4	SS04	Total/NA	Solid	8021B	60009
890-5035-5	SS05	Total/NA	Solid	8021B	60009
890-5035-6	SS06	Total/NA	Solid	8021B	60009
890-5035-7	SS07	Total/NA	Solid	8021B	60009
890-5035-8	SS08	Total/NA	Solid	8021B	60009
890-5035-9	SS09	Total/NA	Solid	8021B	60009
890-5035-10	SS10	Total/NA	Solid	8021B	60009
890-5035-11	SS11	Total/NA	Solid	8021B	60009
MB 880-60006/8	Method Blank	Total/NA	Solid	8021B	
MB 880-60009/5-A	Method Blank	Total/NA	Solid	8021B	60009
LCS 880-60009/1-A	Lab Control Sample	Total/NA	Solid	8021B	60009
LCSD 880-60009/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	60009
880-31964-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	60009
880-31964-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	60009

Prep Batch: 60009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-1	SS01	Total/NA	Solid	5035	
890-5035-2	SS02	Total/NA	Solid	5035	
890-5035-3	SS03	Total/NA	Solid	5035	
890-5035-4	SS04	Total/NA	Solid	5035	
890-5035-5	SS05	Total/NA	Solid	5035	
890-5035-6	SS06	Total/NA	Solid	5035	
890-5035-7	SS07	Total/NA	Solid	5035	
890-5035-8	SS08	Total/NA	Solid	5035	
890-5035-9	SS09	Total/NA	Solid	5035	
890-5035-10	SS10	Total/NA	Solid	5035	
890-5035-11	SS11	Total/NA	Solid	5035	
MB 880-60009/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-60009/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-60009/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-31964-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-31964-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 60110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-1	SS01	Total/NA	Solid	Total BTEX	
890-5035-2	SS02	Total/NA	Solid	Total BTEX	
890-5035-3	SS03	Total/NA	Solid	Total BTEX	
890-5035-4	SS04	Total/NA	Solid	Total BTEX	
890-5035-5	SS05	Total/NA	Solid	Total BTEX	
890-5035-6	SS06	Total/NA	Solid	Total BTEX	
890-5035-7	SS07	Total/NA	Solid	Total BTEX	
890-5035-8	SS08	Total/NA	Solid	Total BTEX	
890-5035-9	SS09	Total/NA	Solid	Total BTEX	
890-5035-10	SS10	Total/NA	Solid	Total BTEX	
890-5035-11	SS11	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

GC Semi VOA

Prep Batch: 60317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-1	SS01	Total/NA	Solid	8015NM Prep	
890-5035-2	SS02	Total/NA	Solid	8015NM Prep	
890-5035-3	SS03	Total/NA	Solid	8015NM Prep	
890-5035-4	SS04	Total/NA	Solid	8015NM Prep	
890-5035-5	SS05	Total/NA	Solid	8015NM Prep	
890-5035-6	SS06	Total/NA	Solid	8015NM Prep	
890-5035-7	SS07	Total/NA	Solid	8015NM Prep	
890-5035-8	SS08	Total/NA	Solid	8015NM Prep	
890-5035-9	SS09	Total/NA	Solid	8015NM Prep	
890-5035-10	SS10	Total/NA	Solid	8015NM Prep	
890-5035-11	SS11	Total/NA	Solid	8015NM Prep	
MB 880-60317/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-60317/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-60317/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5035-1 MS	SS01	Total/NA	Solid	8015NM Prep	
890-5035-1 MSD	SS01	Total/NA	Solid	8015NM Prep	

Analysis Batch: 60422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-1	SS01	Total/NA	Solid	8015B NM	60317
890-5035-2	SS02	Total/NA	Solid	8015B NM	60317
890-5035-3	SS03	Total/NA	Solid	8015B NM	60317
890-5035-4	SS04	Total/NA	Solid	8015B NM	60317
890-5035-5	SS05	Total/NA	Solid	8015B NM	60317
890-5035-6	SS06	Total/NA	Solid	8015B NM	60317
890-5035-7	SS07	Total/NA	Solid	8015B NM	60317
890-5035-8	SS08	Total/NA	Solid	8015B NM	60317
890-5035-9	SS09	Total/NA	Solid	8015B NM	60317
890-5035-10	SS10	Total/NA	Solid	8015B NM	60317
890-5035-11	SS11	Total/NA	Solid	8015B NM	60317
MB 880-60317/1-A	Method Blank	Total/NA	Solid	8015B NM	60317
LCS 880-60317/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	60317
LCSD 880-60317/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	60317
890-5035-1 MS	SS01	Total/NA	Solid	8015B NM	60317
890-5035-1 MSD	SS01	Total/NA	Solid	8015B NM	60317

Analysis Batch: 60567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-1	SS01	Total/NA	Solid	8015 NM	
890-5035-2	SS02	Total/NA	Solid	8015 NM	
890-5035-3	SS03	Total/NA	Solid	8015 NM	
890-5035-4	SS04	Total/NA	Solid	8015 NM	
890-5035-5	SS05	Total/NA	Solid	8015 NM	
890-5035-6	SS06	Total/NA	Solid	8015 NM	
890-5035-7	SS07	Total/NA	Solid	8015 NM	
890-5035-8	SS08	Total/NA	Solid	8015 NM	
890-5035-9	SS09	Total/NA	Solid	8015 NM	
890-5035-10	SS10	Total/NA	Solid	8015 NM	
890-5035-11	SS11	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

HPLC/IC

Leach Batch: 59363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-1	SS01	Soluble	Solid	DI Leach	
890-5035-2	SS02	Soluble	Solid	DI Leach	
890-5035-3	SS03	Soluble	Solid	DI Leach	
890-5035-4	SS04	Soluble	Solid	DI Leach	
890-5035-5	SS05	Soluble	Solid	DI Leach	
890-5035-6	SS06	Soluble	Solid	DI Leach	
890-5035-7	SS07	Soluble	Solid	DI Leach	
890-5035-8	SS08	Soluble	Solid	DI Leach	
890-5035-9	SS09	Soluble	Solid	DI Leach	
MB 880-59363/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-59363/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-59363/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5034-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-5034-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-5034-A-11-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-5034-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Leach Batch: 59457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-10	SS10	Soluble	Solid	DI Leach	
890-5035-11	SS11	Soluble	Solid	DI Leach	
MB 880-59457/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-59457/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-59457/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-31722-A-1-G MS	Matrix Spike	Soluble	Solid	DI Leach	
880-31722-A-1-H MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 59519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-10	SS10	Soluble	Solid	300.0	59457
890-5035-11	SS11	Soluble	Solid	300.0	59457
MB 880-59457/1-A	Method Blank	Soluble	Solid	300.0	59457
LCS 880-59457/2-A	Lab Control Sample	Soluble	Solid	300.0	59457
LCSD 880-59457/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	59457
880-31722-A-1-G MS	Matrix Spike	Soluble	Solid	300.0	59457
880-31722-A-1-H MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	59457

Analysis Batch: 59623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5035-1	SS01	Soluble	Solid	300.0	59363
890-5035-2	SS02	Soluble	Solid	300.0	59363
890-5035-3	SS03	Soluble	Solid	300.0	59363
890-5035-4	SS04	Soluble	Solid	300.0	59363
890-5035-5	SS05	Soluble	Solid	300.0	59363
890-5035-6	SS06	Soluble	Solid	300.0	59363
890-5035-7	SS07	Soluble	Solid	300.0	59363
890-5035-8	SS08	Soluble	Solid	300.0	59363
890-5035-9	SS09	Soluble	Solid	300.0	59363
MB 880-59363/1-A	Method Blank	Soluble	Solid	300.0	59363
LCS 880-59363/2-A	Lab Control Sample	Soluble	Solid	300.0	59363
LCSD 880-59363/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	59363

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

HPLC/IC (Continued)

Analysis Batch: 59623 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5034-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	59363
890-5034-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	59363
890-5034-A-11-B MS	Matrix Spike	Soluble	Solid	300.0	59363
890-5034-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	59363

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS01
Date Collected: 08/02/23 11:10
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-1
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			5.02 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 11:03	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 13:30	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		1			59623	08/09/23 04:12	CH	EET MID

Client Sample ID: SS02
Date Collected: 08/02/23 11:15
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-2
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			5.02 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 13:14	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 14:36	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		1			59623	08/09/23 04:19	CH	EET MID

Client Sample ID: SS03
Date Collected: 08/02/23 11:20
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-3
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			5.03 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 13:35	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 14:58	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		1			59623	08/09/23 04:40	CH	EET MID

Client Sample ID: SS04
Date Collected: 08/02/23 11:25
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-4
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			5.00 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 13:55	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS04
Date Collected: 08/02/23 11:25
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-4
Matrix: Solid

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			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 15:20	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		1			59623	08/09/23 04:47	CH	EET MID

Client Sample ID: SS05
Date Collected: 08/02/23 11:30
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-5
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			5.02 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 14:16	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.07 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 15:42	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		5			59623	08/09/23 04:53	CH	EET MID

Client Sample ID: SS06
Date Collected: 08/02/23 11:35
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-6
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			4.96 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 14:36	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 16:04	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		1			59623	08/09/23 05:00	CH	EET MID

Client Sample ID: SS07
Date Collected: 08/02/23 11:40
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-7
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	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 14:57	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			9.96 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 16:26	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS07

Date Collected: 08/02/23 11:40
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		1			59623	08/09/23 05:07	CH	EET MID

Client Sample ID: SS08

Date Collected: 08/02/23 11:45
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-8
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			4.99 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 15:17	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 16:48	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		1			59623	08/09/23 05:14	CH	EET MID

Client Sample ID: SS09

Date Collected: 08/02/23 11:50
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-9
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	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 15:37	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 17:10	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	59363	08/04/23 16:18	KS	EET MID
Soluble	Analysis	300.0		5			59623	08/09/23 05:21	CH	EET MID

Client Sample ID: SS10

Date Collected: 08/02/23 11:55
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-10
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			5.02 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 15:58	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 17:32	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	59457	08/07/23 09:42	KS	EET MID
Soluble	Analysis	300.0		1			59519	08/08/23 15:26	CH	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Client Sample ID: SS11

Date Collected: 08/02/23 12:00
Date Received: 08/04/23 11:23

Lab Sample ID: 890-5035-11

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			5.00 g	5 mL	60009	08/12/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	60006	08/13/23 16:19	SM	EET MID
Total/NA	Analysis	Total BTEX		1			60110	08/14/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			60567	08/18/23 10:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	60317	08/15/23 16:33	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60422	08/17/23 18:16	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	59457	08/07/23 09:42	KS	EET MID
Soluble	Analysis	300.0		1			59519	08/08/23 15:33	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: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

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	T104704400-23-26	06-30-24

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

Method Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

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: Superman Frac Pond

Job ID: 890-5035-1
SDG: 03D2024221

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5035-1	SS01	Solid	08/02/23 11:10	08/04/23 11:23	0.5
890-5035-2	SS02	Solid	08/02/23 11:15	08/04/23 11:23	0.5
890-5035-3	SS03	Solid	08/02/23 11:20	08/04/23 11:23	0.5
890-5035-4	SS04	Solid	08/02/23 11:25	08/04/23 11:23	0.5
890-5035-5	SS05	Solid	08/02/23 11:30	08/04/23 11:23	0.5
890-5035-6	SS06	Solid	08/02/23 11:35	08/04/23 11:23	0.5
890-5035-7	SS07	Solid	08/02/23 11:40	08/04/23 11:23	0.5
890-5035-8	SS08	Solid	08/02/23 11:45	08/04/23 11:23	0.5
890-5035-9	SS09	Solid	08/02/23 11:50	08/04/23 11:23	0.5
890-5035-10	SS10	Solid	08/02/23 11:55	08/04/23 11:23	0.5
890-5035-11	SS11	Solid	08/02/23 12:00	08/04/23 11:23	0.5

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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 2

Project Manager:	Hadlie Green	Bill to: (if different)	Hadlie Green
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:	432-557-8895	Email:	hgreen@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Superman Frac Pond	Turn Around	
Project Number:	03D2024221	☑ Routine ☐ Rush	
Project Location:	32.0158,-103.7133	Due Date:	
Sampler's Name:	Peter Van Patten	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	IR #4
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.2
Total Containers:		Corrected Temperature:	1.0

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS01	Soil	8/2/2023	1110	0.5	Comp	1		x	x	x
SS02	Soil	8/2/2023	1115	0.5	Comp	1		x	x	x
SS03	Soil	8/2/2023	1120	0.5	Comp	1		x	x	x
SS04	Soil	8/2/2023	1125	0.5	Comp	1		x	x	x
SS05	Soil	8/2/2023	1130	0.5	Comp	1		x	x	x
SS06	Soil	8/2/2023	1135	0.5	Comp	1		x	x	x
SS07	Soil	8/2/2023	1140	0.5	Comp	1		x	x	x
SS08	Soil	8/2/2023	1145	0.5	Comp	1		x	x	x
SS09	Soil	8/2/2023	1150	0.5	Comp	1		x	x	x
SS10	Soil	8/2/2023	1155	0.5	Comp	1		x	x	x

ANALYSIS REQUEST

890-5035 Chain of Custody

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

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 Tl 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 Tl 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 Peter Van Patten		8.4.23 1123	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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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 2 of 2

Project Manager:	Hadlie Green	Bill to: (if different)	Hadlie Green
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:	432-557-8895	Email:	hgreen@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Superman Frac Pond	Turn Around	
Project Number:	03D2024221	☑ Routine ☐ Rush	
Project Location:	32.0158,-103.7133	Due Date:	
Sampler's Name:	Peter Van Patten	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT	Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:		
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Temperature Reading:		
Total Containers:		Corrected Temperature:		

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2SO_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Sample Comments
SS11	Soil	8/2/2023	1200	0.5	Comp	1		x	x	x	

Peter Van Patten

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 Tl 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 Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Peter Van Patten		8-4-23 1128	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5035-1
SDG Number: 03D2024221

Login Number: 5035
List Number: 1
Creator: Clifton, Cloe

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: 890-5035-1
SDG Number: 03D2024221

Login Number: 5035
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 08/07/23 09:38 AM

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 9/28/2023 2:18:01 PM Revision 1

JOB DESCRIPTION

Superman Frac Pond
SDG NUMBER 03D2024221

JOB NUMBER

890-5229-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

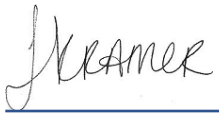
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



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9/28/2023 2:18:01 PM
Revision 1

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

Client: Ensolum
Project/Site: Superman Frac Pond

Laboratory Job ID: 890-5229-1
SDG: 03D2024221

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Definitions/Glossary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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
*1	LCS/LCSD 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.

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: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Job ID: 890-5229-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-5229-1

REVISION

The report being provided is a revision of the original report sent on 9/19/2023. The report (revision 1) is being revised due to Per client email, requesting sample depth corrections.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 9/8/2023 4:33 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.8°C

GC VOA
Method 8021B: Surrogate recovery for the following samples were outside control limits: SS16C (890-5229-22) and (890-5226-A-1-D). 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 880-62271 and analytical batch 880-62265 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: The surrogate recovery for the blank associated with preparation batch 880-62267 and analytical batch 880-62265 was outside the control limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS08A (890-5229-1), SS10A (890-5229-4), SS13 (890-5229-5), SS14 (890-5229-9), SS12 (890-5229-11), SS12A (890-5229-12), SS11A (890-5229-13), SS06A (890-5229-14), SS15 (890-5229-15) and SS15C (890-5229-16). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-5226-A-1-B MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS18 (890-5229-17) and SS18A (890-5229-18). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SS19 (890-5229-19) and SS19A (890-5229-20). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (CCV 880-62265/64). Evidence of matrix interferences is not obvious.

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

Case Narrative

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Job ID: 890-5229-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-5224-A-11-D MS) and (890-5224-A-11-E MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-62229/20), (CCV 880-62229/31) and (CCV 880-62229/5). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS13A (890-5229-6), SS17 (890-5229-7) and SS15 (890-5229-15). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-62290 and analytical batch 880-62306 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS16C (890-5229-22). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-62290 and analytical batch 880-62306 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

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

HPLC/IC

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: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS08A
Date Collected: 09/07/23 13:10
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U F2 F1	0.00199		mg/Kg		09/12/23 11:41	09/13/23 03:27	1
Toluene	<0.00199	U F2 F1	0.00199		mg/Kg		09/12/23 11:41	09/13/23 03:27	1
Ethylbenzene	<0.00199	U F1	0.00199		mg/Kg		09/12/23 11:41	09/13/23 03:27	1
m-Xylene & p-Xylene	<0.00398	U F2 F1	0.00398		mg/Kg		09/12/23 11:41	09/13/23 03:27	1
o-Xylene	<0.00199	U F2 F1	0.00199		mg/Kg		09/12/23 11:41	09/13/23 03:27	1
Xylenes, Total	<0.00398	U F2 F1	0.00398		mg/Kg		09/12/23 11:41	09/13/23 03:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*146*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 03:27*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*09/12/23 11:41*	*09/13/23 03:27*	*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			09/13/23 03:27	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3		mg/Kg			09/13/23 10:52	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	<50.3	U	50.3		mg/Kg		09/12/23 11:30	09/12/23 12:06	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3		mg/Kg		09/12/23 11:30	09/12/23 12:06	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3		mg/Kg		09/12/23 11:30	09/12/23 12:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*09/12/23 11:30*	*09/12/23 12:06*	*1*
o-Terphenyl	*102*		*70 - 130*	*09/12/23 11:30*	*09/12/23 12:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33.7**		5.00		mg/Kg			09/14/23 01:12	1

Client Sample ID: SS07A
Date Collected: 09/07/23 14:00
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-2
Matrix: Solid

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		09/12/23 11:41	09/13/23 03:53	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/23 11:41	09/13/23 03:53	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/23 11:41	09/13/23 03:53	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/23 11:41	09/13/23 03:53	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/23 11:41	09/13/23 03:53	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/23 11:41	09/13/23 03:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*76*		*70 - 130*	*09/12/23 11:41*	*09/13/23 03:53*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS07A
Date Collected: 09/07/23 14:00
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/23 11:41*	*09/13/23 03:53*	*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			09/13/23 12:56	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			09/13/23 10:52	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	<50.3	U	50.3	mg/Kg		09/12/23 11:30	09/12/23 13:11	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		09/12/23 11:30	09/12/23 13:11	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		09/12/23 11:30	09/12/23 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*09/12/23 11:30*	*09/12/23 13:11*	*1*
o-Terphenyl	*115*		*70 - 130*	*09/12/23 11:30*	*09/12/23 13:11*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8250**		50.3	mg/Kg			09/14/23 01:18	10

Client Sample ID: SS09A
Date Collected: 09/08/23 09:45
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-3
Matrix: Solid

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		09/12/23 11:41	09/13/23 04:19	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/12/23 11:41	09/13/23 04:19	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/12/23 11:41	09/13/23 04:19	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		09/12/23 11:41	09/13/23 04:19	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		09/12/23 11:41	09/13/23 04:19	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		09/12/23 11:41	09/13/23 04:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*09/12/23 11:41*	*09/13/23 04:19*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*09/12/23 11:41*	*09/13/23 04:19*	*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			09/13/23 12:56	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1	mg/Kg			09/13/23 10:52	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS09A
Date Collected: 09/08/23 09:45
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-3
Matrix: Solid

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	<50.1	U	50.1		mg/Kg		09/12/23 11:30	09/12/23 13:32	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		09/12/23 11:30	09/12/23 13:32	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		09/12/23 11:30	09/12/23 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*09/12/23 11:30*	*09/12/23 13:32*	*1*
o-Terphenyl	*114*		*70 - 130*	*09/12/23 11:30*	*09/12/23 13:32*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**192**		5.01		mg/Kg			09/14/23 01:25	1

Client Sample ID: SS10A
Date Collected: 09/08/23 10:20
Date Received: 09/08/23 16:33
Sample Depth: 1.5

Lab Sample ID: 890-5229-4
Matrix: Solid

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		09/12/23 11:41	09/13/23 04:44	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 04:44	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 04:44	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/12/23 11:41	09/13/23 04:44	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 04:44	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/12/23 11:41	09/13/23 04:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*159*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 04:44*	*1*
1,4-Difluorobenzene (Surr)	*130*		*70 - 130*	*09/12/23 11:41*	*09/13/23 04:44*	*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			09/13/23 12:56	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5		mg/Kg			09/13/23 10:52	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	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 13:54	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 13:54	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 13:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*09/12/23 11:30*	*09/12/23 13:54*	*1*
o-Terphenyl	*97*		*70 - 130*	*09/12/23 11:30*	*09/12/23 13:54*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS10A
Date Collected: 09/08/23 10:20
Date Received: 09/08/23 16:33
Sample Depth: 1.5

Lab Sample ID: 890-5229-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	60.6		5.02		mg/Kg			09/14/23 01:31	1

Client Sample ID: SS13
Date Collected: 09/08/23 10:40
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-5
Matrix: Solid

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		09/12/23 11:41	09/13/23 05:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 05:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 05:10	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		09/12/23 11:41	09/13/23 05:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 05:10	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		09/12/23 11:41	09/13/23 05:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*154*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 05:10*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*09/12/23 11:41*	*09/13/23 05:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			09/13/23 12:56	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			09/13/23 10:52	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	<49.7	U	49.7		mg/Kg		09/12/23 11:30	09/12/23 14:17	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		09/12/23 11:30	09/12/23 14:17	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		09/12/23 11:30	09/12/23 14:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*133*	*S1+*	*70 - 130*	*09/12/23 11:30*	*09/12/23 14:17*	*1*
o-Terphenyl	*141*	*S1+*	*70 - 130*	*09/12/23 11:30*	*09/12/23 14:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3800		24.9		mg/Kg			09/14/23 01:37	5

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS13A
Date Collected: 09/08/23 10:50
Date Received: 09/08/23 16:33
Sample Depth: 3.0

Lab Sample ID: 890-5229-6
Matrix: Solid

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		09/12/23 11:41	09/13/23 05:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 05:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 05:36	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/12/23 11:41	09/13/23 05:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 05:36	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/12/23 11:41	09/13/23 05:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*	*09/12/23 11:41*	*09/13/23 05:36*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/23 11:41*	*09/13/23 05:36*	*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			09/13/23 12:56	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			09/13/23 10:52	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		09/12/23 11:30	09/12/23 14:38	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/23 11:30	09/12/23 14:38	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/23 11:30	09/12/23 14:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*09/12/23 11:30*	*09/12/23 14:38*	*1*
o-Terphenyl	*126*		*70 - 130*	*09/12/23 11:30*	*09/12/23 14:38*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4440**		25.3		mg/Kg			09/15/23 11:16	5

Client Sample ID: SS17
Date Collected: 09/08/23 11:20
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-7
Matrix: Solid

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		09/12/23 11:41	09/13/23 06:01	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/23 11:41	09/13/23 06:01	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/23 11:41	09/13/23 06:01	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/23 11:41	09/13/23 06:01	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/23 11:41	09/13/23 06:01	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/23 11:41	09/13/23 06:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*09/12/23 11:41*	*09/13/23 06:01*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS17
Date Collected: 09/08/23 11:20
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-7
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*09/12/23 11:41*	*09/13/23 06:01*	*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			09/13/23 12:56	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			09/13/23 10:52	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	<49.7	U	49.7	mg/Kg		09/12/23 11:30	09/12/23 15:00	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		09/12/23 11:30	09/12/23 15:00	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		09/12/23 11:30	09/12/23 15:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*2*	*S1-*	*70 - 130*	*09/12/23 11:30*	*09/12/23 15:00*	*1*
o-Terphenyl	*2*	*S1-*	*70 - 130*	*09/12/23 11:30*	*09/12/23 15:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**883**		50.3	mg/Kg			09/17/23 11:59	10

Client Sample ID: SS17A
Date Collected: 09/08/23 11:30
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-8
Matrix: Solid

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		09/12/23 11:41	09/13/23 06:27	1
Toluene	<0.00202	U	0.00202	mg/Kg		09/12/23 11:41	09/13/23 06:27	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		09/12/23 11:41	09/13/23 06:27	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		09/12/23 11:41	09/13/23 06:27	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		09/12/23 11:41	09/13/23 06:27	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		09/12/23 11:41	09/13/23 06:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*	*09/12/23 11:41*	*09/13/23 06:27*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*09/12/23 11:41*	*09/13/23 06:27*	*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			09/13/23 12:56	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			09/13/23 10:52	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS17A
Date Collected: 09/08/23 11:30
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-8
Matrix: Solid

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		09/12/23 11:30	09/12/23 15:22	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/23 11:30	09/12/23 15:22	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/23 11:30	09/12/23 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*124*		*70 - 130*	*09/12/23 11:30*	*09/12/23 15:22*	*1*
o-Terphenyl	*128*		*70 - 130*	*09/12/23 11:30*	*09/12/23 15:22*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**58.7**		4.99		mg/Kg			09/15/23 11:38	1

Client Sample ID: SS14
Date Collected: 09/08/23 11:40
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-9
Matrix: Solid

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		09/12/23 11:41	09/13/23 06:54	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 06:54	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 06:54	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 06:54	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 06:54	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 06:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*136*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 06:54*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*09/12/23 11:41*	*09/13/23 06:54*	*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			09/13/23 12:56	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2		mg/Kg			09/13/23 10:52	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	<50.2	U	50.2		mg/Kg		09/12/23 11:30	09/12/23 15:44	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2		mg/Kg		09/12/23 11:30	09/12/23 15:44	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2		mg/Kg		09/12/23 11:30	09/12/23 15:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*124*		*70 - 130*	*09/12/23 11:30*	*09/12/23 15:44*	*1*
o-Terphenyl	*129*		*70 - 130*	*09/12/23 11:30*	*09/12/23 15:44*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS14
Date Collected: 09/08/23 11:40
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-9
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.1		4.97		mg/Kg			09/15/23 11:43	1

Client Sample ID: SS14A
Date Collected: 09/08/23 11:50
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-10
Matrix: Solid

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		09/12/23 11:41	09/13/23 07:21	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 07:21	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 07:21	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 07:21	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 07:21	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 07:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*	*09/12/23 11:41*	*09/13/23 07:21*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*09/12/23 11:41*	*09/13/23 07:21*	*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			09/13/23 12:56	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5		mg/Kg			09/13/23 10:52	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	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 16:06	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 16:06	1
OII Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*09/12/23 11:30*	*09/12/23 16:06*	*1*
o-Terphenyl	*110*		*70 - 130*	*09/12/23 11:30*	*09/12/23 16:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	56.7		5.02		mg/Kg			09/15/23 11:48	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS12

Date Collected: 09/08/23 12:00
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-11
Matrix: Solid

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		09/12/23 11:41	09/13/23 09:08	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/23 11:41	09/13/23 09:08	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/23 11:41	09/13/23 09:08	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/23 11:41	09/13/23 09:08	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/23 11:41	09/13/23 09:08	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/23 11:41	09/13/23 09:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*152*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 09:08*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*09/12/23 11:41*	*09/13/23 09:08*	*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			09/13/23 09:08	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5		mg/Kg			09/13/23 10:52	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	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 16:50	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 16:50	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		09/12/23 11:30	09/12/23 16:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*09/12/23 11:30*	*09/12/23 16:50*	*1*
o-Terphenyl	*120*		*70 - 130*	*09/12/23 11:30*	*09/12/23 16:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**226**		4.96		mg/Kg			09/15/23 11:54	1

Client Sample ID: SS12A

Date Collected: 09/08/23 12:10
Date Received: 09/08/23 16:33
Sample Depth: 1.5

Lab Sample ID: 890-5229-12
Matrix: Solid

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		09/12/23 11:41	09/13/23 09:35	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 09:35	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 09:35	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/12/23 11:41	09/13/23 09:35	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 09:35	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/12/23 11:41	09/13/23 09:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*140*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 09:35*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS12A
Date Collected: 09/08/23 12:10
Date Received: 09/08/23 16:33
Sample Depth: 1.5

Lab Sample ID: 890-5229-12
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*129*		*70 - 130*	*09/12/23 11:41*	*09/13/23 09:35*	*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			09/13/23 09:35	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			09/13/23 10:52	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		09/12/23 11:30	09/12/23 17:13	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		09/12/23 11:30	09/12/23 17:13	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/12/23 11:30	09/12/23 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*09/12/23 11:30*	*09/12/23 17:13*	*1*
o-Terphenyl	*100*		*70 - 130*	*09/12/23 11:30*	*09/12/23 17:13*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33.3**		4.97	mg/Kg			09/15/23 11:59	1

Client Sample ID: SS11A
Date Collected: 09/08/23 12:20
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-13
Matrix: Solid

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		09/12/23 11:41	09/13/23 10:01	1
Toluene	<0.00202	U	0.00202	mg/Kg		09/12/23 11:41	09/13/23 10:01	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		09/12/23 11:41	09/13/23 10:01	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		09/12/23 11:41	09/13/23 10:01	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		09/12/23 11:41	09/13/23 10:01	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		09/12/23 11:41	09/13/23 10:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*142*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 10:01*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/23 11:41*	*09/13/23 10:01*	*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			09/13/23 10:01	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			09/13/23 10:52	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS11A
Date Collected: 09/08/23 12:20
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-13
Matrix: Solid

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		09/12/23 11:30	09/12/23 17:35	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/23 11:30	09/12/23 17:35	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/23 11:30	09/12/23 17:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*119*		*70 - 130*	*09/12/23 11:30*	*09/12/23 17:35*	*1*
o-Terphenyl	*121*		*70 - 130*	*09/12/23 11:30*	*09/12/23 17:35*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.4**		5.01		mg/Kg			09/15/23 12:05	1

Client Sample ID: SS06A
Date Collected: 09/08/23 12:40
Date Received: 09/08/23 16:33
Sample Depth: 3.0

Lab Sample ID: 890-5229-14
Matrix: Solid

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		09/12/23 11:41	09/13/23 10:39	1
Toluene	<0.00202	U	0.00202		mg/Kg		09/12/23 11:41	09/13/23 10:39	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		09/12/23 11:41	09/13/23 10:39	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		09/12/23 11:41	09/13/23 10:39	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		09/12/23 11:41	09/13/23 10:39	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		09/12/23 11:41	09/13/23 10:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*152*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 10:39*	*1*
1,4-Difluorobenzene (Surr)	*124*		*70 - 130*	*09/12/23 11:41*	*09/13/23 10:39*	*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			09/13/23 10:39	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			09/13/23 10:52	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		09/12/23 11:30	09/12/23 17:56	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/23 11:30	09/12/23 17:56	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/23 11:30	09/12/23 17:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*09/12/23 11:30*	*09/12/23 17:56*	*1*
o-Terphenyl	*115*		*70 - 130*	*09/12/23 11:30*	*09/12/23 17:56*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS06A
Date Collected: 09/08/23 12:40
Date Received: 09/08/23 16:33
Sample Depth: 3.0

Lab Sample ID: 890-5229-14
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1480		25.1		mg/Kg			09/15/23 12:22	5

Client Sample ID: SS15
Date Collected: 09/08/23 12:50
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-15
Matrix: Solid

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		09/12/23 11:41	09/13/23 11:05	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 11:05	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 11:05	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 11:05	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 11:05	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 11:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*144*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 11:05*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*09/12/23 11:41*	*09/13/23 11:05*	*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			09/13/23 11:05	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			09/13/23 10:52	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	<49.6	U	49.6		mg/Kg		09/12/23 11:30	09/12/23 18:18	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		09/12/23 11:30	09/12/23 18:18	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		09/12/23 11:30	09/12/23 18:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*125*		*70 - 130*	*09/12/23 11:30*	*09/12/23 18:18*	*1*
o-Terphenyl	*133*	*S1+*	*70 - 130*	*09/12/23 11:30*	*09/12/23 18:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2220		25.0		mg/Kg			09/15/23 12:27	5

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS15C
Date Collected: 09/08/23 13:20
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-16
Matrix: Solid

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		09/12/23 11:41	09/13/23 11:31	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/23 11:41	09/13/23 11:31	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/23 11:41	09/13/23 11:31	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/23 11:41	09/13/23 11:31	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/23 11:41	09/13/23 11:31	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/23 11:41	09/13/23 11:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*139*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 11:31*	*1*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*	*09/12/23 11:41*	*09/13/23 11:31*	*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			09/13/23 11:31	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			09/13/23 10:52	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	<49.7	U	49.7		mg/Kg		09/12/23 11:30	09/12/23 18:39	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		09/12/23 11:30	09/12/23 18:39	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		09/12/23 11:30	09/12/23 18:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*09/12/23 11:30*	*09/12/23 18:39*	*1*
o-Terphenyl	*118*		*70 - 130*	*09/12/23 11:30*	*09/12/23 18:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6300**		49.9		mg/Kg			09/15/23 12:45	10

Client Sample ID: SS18
Date Collected: 09/08/23 13:40
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-17
Matrix: Solid

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		09/12/23 11:41	09/13/23 11:58	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 11:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 11:58	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		09/12/23 11:41	09/13/23 11:58	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 11:58	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		09/12/23 11:41	09/13/23 11:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*156*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 11:58*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS18
Date Collected: 09/08/23 13:40
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-17
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*149*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 11:58*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			09/13/23 11:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.5	U	49.5	mg/Kg			09/13/23 10:52	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	<49.5	U	49.5	mg/Kg		09/12/23 11:30	09/12/23 19:01	1
Diesel Range Organics (Over C10-C28)	<49.5	U	49.5	mg/Kg		09/12/23 11:30	09/12/23 19:01	1
Oil Range Organics (Over C28-C36)	<49.5	U	49.5	mg/Kg		09/12/23 11:30	09/12/23 19:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*09/12/23 11:30*	*09/12/23 19:01*	*1*
o-Terphenyl	*123*		*70 - 130*	*09/12/23 11:30*	*09/12/23 19:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**		4.97	mg/Kg			09/15/23 12:51	1

Client Sample ID: SS18A
Date Collected: 09/08/23 13:50
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-18
Matrix: Solid

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		09/12/23 11:41	09/13/23 12:24	1
Toluene	<0.00199	U	0.00199	mg/Kg		09/12/23 11:41	09/13/23 12:24	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		09/12/23 11:41	09/13/23 12:24	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		09/12/23 11:41	09/13/23 12:24	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		09/12/23 11:41	09/13/23 12:24	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		09/12/23 11:41	09/13/23 12:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*138*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 12:24*	*1*
1,4-Difluorobenzene (Surr)	*161*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 12:24*	*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			09/13/23 12:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			09/13/23 10:52	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS18A
Date Collected: 09/08/23 13:50
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-18
Matrix: Solid

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	<50.3	U	50.3		mg/Kg		09/12/23 11:30	09/12/23 19:22	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3		mg/Kg		09/12/23 11:30	09/12/23 19:22	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3		mg/Kg		09/12/23 11:30	09/12/23 19:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*09/12/23 11:30*	*09/12/23 19:22*	*1*
o-Terphenyl	*102*		*70 - 130*	*09/12/23 11:30*	*09/12/23 19:22*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**65.7**		5.00		mg/Kg			09/15/23 12:57	1

Client Sample ID: SS19
Date Collected: 09/08/23 14:00
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-19
Matrix: Solid

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		09/12/23 11:41	09/13/23 12:50	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 12:50	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 12:50	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 12:50	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 12:50	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*	*09/12/23 11:41*	*09/13/23 12:50*	*1*
1,4-Difluorobenzene (Surr)	*65*	*S1-*	*70 - 130*	*09/12/23 11:41*	*09/13/23 12:50*	*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			09/13/23 12:50	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			09/13/23 10:52	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	<50.1	U	50.1		mg/Kg		09/12/23 11:30	09/12/23 19:43	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		09/12/23 11:30	09/12/23 19:43	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		09/12/23 11:30	09/12/23 19:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*09/12/23 11:30*	*09/12/23 19:43*	*1*
o-Terphenyl	*111*		*70 - 130*	*09/12/23 11:30*	*09/12/23 19:43*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS19
Date Collected: 09/08/23 14:00
Date Received: 09/08/23 16:33
Sample Depth: 0.5

Lab Sample ID: 890-5229-19
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48.7		5.03		mg/Kg			09/15/23 13:02	1

Client Sample ID: SS19A
Date Collected: 09/08/23 14:10
Date Received: 09/08/23 16:33
Sample Depth: 1.0

Lab Sample ID: 890-5229-20
Matrix: Solid

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		09/12/23 11:41	09/13/23 13:17	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 13:17	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 13:17	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 13:17	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:41	09/13/23 13:17	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/23 11:41	09/13/23 13:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*174*	*S1+*	*70 - 130*	*09/12/23 11:41*	*09/13/23 13:17*	*1*
1,4-Difluorobenzene (Surr)	*130*		*70 - 130*	*09/12/23 11:41*	*09/13/23 13:17*	*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			09/13/23 13:17	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			09/13/23 10:52	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		09/12/23 11:30	09/12/23 20:05	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/23 11:30	09/12/23 20:05	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/23 11:30	09/12/23 20:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*09/12/23 11:30*	*09/12/23 20:05*	*1*
o-Terphenyl	*105*		*70 - 130*	*09/12/23 11:30*	*09/12/23 20:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35.4		5.01		mg/Kg			09/15/23 13:08	1

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS16

Lab Sample ID: 890-5229-21
Matrix: Solid
Date Collected: 09/08/23 12:00
Date Received: 09/08/23 16:33
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		09/12/23 11:43	09/13/23 05:07	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:43	09/13/23 05:07	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:43	09/13/23 05:07	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/23 11:43	09/13/23 05:07	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:43	09/13/23 05:07	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/23 11:43	09/13/23 05:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*	*09/12/23 11:43*	*09/13/23 05:07*	*1*
1,4-Difluorobenzene (Surr)	*73*		*70 - 130*	*09/12/23 11:43*	*09/13/23 05:07*	*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			09/13/23 12:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			09/13/23 10:49	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	<49.7	U	49.7		mg/Kg		09/12/23 11:26	09/12/23 20:05	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		09/12/23 11:26	09/12/23 20:05	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		09/12/23 11:26	09/12/23 20:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*130*		*70 - 130*	*09/12/23 11:26*	*09/12/23 20:05*	*1*
o-Terphenyl	*112*		*70 - 130*	*09/12/23 11:26*	*09/12/23 20:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**712**		5.02		mg/Kg			09/15/23 13:14	1

Client Sample ID: SS16C

Lab Sample ID: 890-5229-22
Matrix: Solid
Date Collected: 09/08/23 12:10
Date Received: 09/08/23 16:33
Sample Depth: 2.75

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		09/12/23 11:43	09/13/23 05:27	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:43	09/13/23 05:27	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:43	09/13/23 05:27	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/23 11:43	09/13/23 05:27	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/23 11:43	09/13/23 05:27	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/23 11:43	09/13/23 05:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*70 - 130*	*09/12/23 11:43*	*09/13/23 05:27*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS16C
Date Collected: 09/08/23 12:10
Date Received: 09/08/23 16:33
Sample Depth: 2.75

Lab Sample ID: 890-5229-22
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*69*	*S1-*	*70 - 130*	*09/12/23 11:43*	*09/13/23 05:27*	*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			09/13/23 12:14	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			09/14/23 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 *1	49.9	mg/Kg		09/12/23 16:24	09/13/23 13:40	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		09/12/23 16:24	09/13/23 13:40	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		09/12/23 16:24	09/13/23 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*140*	*S1+*	*70 - 130*	*09/12/23 16:24*	*09/13/23 13:40*	*1*
o-Terphenyl	*149*	*S1+*	*70 - 130*	*09/12/23 16:24*	*09/13/23 13:40*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3000**		24.9	mg/Kg			09/15/23 13:20	5

Surrogate Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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)
890-5226-A-1-B MS	Matrix Spike	132 S1+	108
890-5226-A-1-C MSD	Matrix Spike Duplicate	125	116
890-5229-1	SS08A	146 S1+	100
890-5229-1 MS	SS08A	134 S1+	489 S1+
890-5229-1 MSD	SS08A	112	108
890-5229-2	SS07A	76	93
890-5229-3	SS09A	110	85
890-5229-4	SS10A	159 S1+	130
890-5229-5	SS13	154 S1+	95
890-5229-6	SS13A	121	93
890-5229-7	SS17	110	84
890-5229-8	SS17A	128	100
890-5229-9	SS14	136 S1+	105
890-5229-10	SS14A	129	100
890-5229-11	SS12	152 S1+	103
890-5229-12	SS12A	140 S1+	129
890-5229-13	SS11A	142 S1+	93
890-5229-14	SS06A	152 S1+	124
890-5229-15	SS15	144 S1+	107
890-5229-16	SS15C	139 S1+	114
890-5229-17	SS18	156 S1+	149 S1+
890-5229-18	SS18A	138 S1+	161 S1+
890-5229-19	SS19	123	65 S1-
890-5229-20	SS19A	174 S1+	130
890-5229-21	SS16	80	73
890-5229-22	SS16C	79	69 S1-
LCS 880-62271/1-A	Lab Control Sample	126	118
LCS 880-62272/1-A	Lab Control Sample	121	118
LCSD 880-62271/2-A	Lab Control Sample Dup	118	92
LCSD 880-62272/2-A	Lab Control Sample Dup	128	112
MB 880-62129/5-A	Method Blank	70	95
MB 880-62267/5-A	Method Blank	66 S1-	106
MB 880-62271/5-A	Method Blank	73	119
MB 880-62272/5-A	Method Blank	70	88

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)
890-5224-A-11-D MS	Matrix Spike	132 S1+	102
890-5224-A-11-E MSD	Matrix Spike Duplicate	133 S1+	103
890-5229-1	SS08A	99	102
890-5229-1 MS	SS08A	113	107
890-5229-1 MSD	SS08A	103	97

Surrogate Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-5229-2	SS07A	109	115
890-5229-3	SS09A	110	114
890-5229-4	SS10A	93	97
890-5229-5	SS13	133 S1+	141 S1+
890-5229-6	SS13A	122	126
890-5229-7	SS17	2 S1-	2 S1-
890-5229-8	SS17A	124	128
890-5229-9	SS14	124	129
890-5229-10	SS14A	105	110
890-5229-11	SS12	118	120
890-5229-12	SS12A	98	100
890-5229-13	SS11A	119	121
890-5229-14	SS06A	112	115
890-5229-15	SS15	125	133 S1+
890-5229-16	SS15C	112	118
890-5229-17	SS18	122	123
890-5229-18	SS18A	102	102
890-5229-19	SS19	109	111
890-5229-20	SS19A	104	105
890-5229-21	SS16	130	112
890-5229-22	SS16C	140 S1+	149 S1+
890-5232-A-1-C MS	Matrix Spike	115	109
890-5232-A-1-D MSD	Matrix Spike Duplicate	120	114
LCS 880-62268/2-A	Lab Control Sample	105	103
LCS 880-62269/2-A	Lab Control Sample	95	105
LCS 880-62290/2-A	Lab Control Sample	99	111
LCSD 880-62268/3-A	Lab Control Sample Dup	106	100
LCSD 880-62269/3-A	Lab Control Sample Dup	92	102
LCSD 880-62290/3-A	Lab Control Sample Dup	98	108
MB 880-62268/1-A	Method Blank	123	109
MB 880-62269/1-A	Method Blank	117	124
MB 880-62290/1-A	Method Blank	132 S1+	142 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-62129/5-A
Matrix: Solid
Analysis Batch: 62238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62129

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/11/23 09:25	09/12/23 11:40	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/11/23 09:25	09/12/23 11:40	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/11/23 09:25	09/12/23 11:40	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/11/23 09:25	09/12/23 11:40	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/11/23 09:25	09/12/23 11:40	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/11/23 09:25	09/12/23 11:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*70*		*70 - 130*	*09/11/23 09:25*	*09/12/23 11:40*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*09/11/23 09:25*	*09/12/23 11:40*	*1*

Lab Sample ID: MB 880-62267/5-A
Matrix: Solid
Analysis Batch: 62265

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62267

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/23 10:29	09/12/23 13:43	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/23 10:29	09/12/23 13:43	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/23 10:29	09/12/23 13:43	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/23 10:29	09/12/23 13:43	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/23 10:29	09/12/23 13:43	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/23 10:29	09/12/23 13:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*66*	*S1-*	*70 - 130*	*09/12/23 10:29*	*09/12/23 13:43*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*09/12/23 10:29*	*09/12/23 13:43*	*1*

Lab Sample ID: MB 880-62271/5-A
Matrix: Solid
Analysis Batch: 62265

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62271

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 03:02	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 03:02	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 03:02	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/23 11:41	09/13/23 03:02	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:41	09/13/23 03:02	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/23 11:41	09/13/23 03:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*70 - 130*	*09/12/23 11:41*	*09/13/23 03:02*	*1*
1,4-Difluorobenzene (Surr)	*119*		*70 - 130*	*09/12/23 11:41*	*09/13/23 03:02*	*1*

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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

Lab Sample ID: LCS 880-62271/1-A
Matrix: Solid
Analysis Batch: 62265

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62271

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09528		mg/Kg		95	70 - 130		
Toluene			0.100	0.09139		mg/Kg		91	70 - 130		
Ethylbenzene			0.100	0.1038		mg/Kg		104	70 - 130		
m-Xylene & p-Xylene			0.200	0.2020		mg/Kg		101	70 - 130		
o-Xylene			0.100	0.1052		mg/Kg		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*

Lab Sample ID: LCSD 880-62271/2-A
Matrix: Solid
Analysis Batch: 62265

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 62271

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09888		mg/Kg		99	70 - 130	4	35
Toluene			0.100	0.08786		mg/Kg		88	70 - 130	4	35
Ethylbenzene			0.100	0.09045		mg/Kg		90	70 - 130	14	35
m-Xylene & p-Xylene			0.200	0.1761		mg/Kg		88	70 - 130	14	35
o-Xylene			0.100	0.09186		mg/Kg		92	70 - 130	14	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 890-5229-1 MS
Matrix: Solid
Analysis Batch: 62265

Client Sample ID: SS08A
Prep Type: Total/NA
Prep Batch: 62271

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U F2 F1	0.0998	0.03928	F1	mg/Kg		39	70 - 130		
Toluene	<0.00199	U F2 F1	0.0998	0.02373	F1	mg/Kg		24	70 - 130		
Ethylbenzene	<0.00199	U F1	0.0998	0.06053	F1	mg/Kg		61	70 - 130		
m-Xylene & p-Xylene	<0.00398	U F2 F1	0.200	0.06187	F1	mg/Kg		31	70 - 130		
o-Xylene	<0.00199	U F2 F1	0.0998	0.03599	F1	mg/Kg		36	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*134*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*489*	*S1+*	*70 - 130*

Lab Sample ID: 890-5229-1 MSD
Matrix: Solid
Analysis Batch: 62265

Client Sample ID: SS08A
Prep Type: Total/NA
Prep Batch: 62271

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F2 F1	0.100	0.07168	F2	mg/Kg		71	70 - 130	58	35
Toluene	<0.00199	U F2 F1	0.100	0.07075	F2	mg/Kg		70	70 - 130	100	35
Ethylbenzene	<0.00199	U F1	0.100	0.06610	F1	mg/Kg		66	70 - 130	9	35

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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

Lab Sample ID: 890-5229-1 MSD
Matrix: Solid
Analysis Batch: 62265

Client Sample ID: SS08A
Prep Type: Total/NA
Prep Batch: 62271

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
m-Xylene & p-Xylene	<0.00398	U F2 F1	0.201	0.1310	F2 F1	mg/Kg		65	70 - 130	72	35
o-Xylene	<0.00199	U F2 F1	0.100	0.06963	F2 F1	mg/Kg		69	70 - 130	64	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: MB 880-62272/5-A
Matrix: Solid
Analysis Batch: 62238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62272

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:43	09/12/23 22:17	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:43	09/12/23 22:17	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:43	09/12/23 22:17	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/23 11:43	09/12/23 22:17	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/23 11:43	09/12/23 22:17	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/23 11:43	09/12/23 22:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*70*		*70 - 130*	*09/12/23 11:43*	*09/12/23 22:17*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*09/12/23 11:43*	*09/12/23 22:17*	*1*

Lab Sample ID: LCS 880-62272/1-A
Matrix: Solid
Analysis Batch: 62238

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62272

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09610		mg/Kg		96	70 - 130		
Toluene			0.100	0.09660		mg/Kg		97	70 - 130		
Ethylbenzene			0.100	0.1043		mg/Kg		104	70 - 130		
m-Xylene & p-Xylene			0.200	0.2233		mg/Kg		112	70 - 130		
o-Xylene			0.100	0.1130		mg/Kg		113	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*

Lab Sample ID: LCSD 880-62272/2-A
Matrix: Solid
Analysis Batch: 62238

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 62272

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09581		mg/Kg		96	70 - 130	0	35
Toluene			0.100	0.1011		mg/Kg		101	70 - 130	5	35
Ethylbenzene			0.100	0.1096		mg/Kg		110	70 - 130	5	35
m-Xylene & p-Xylene			0.200	0.2327		mg/Kg		116	70 - 130	4	35
o-Xylene			0.100	0.1177		mg/Kg		118	70 - 130	4	35

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	128		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: 890-5226-A-1-B MS
Matrix: Solid
Analysis Batch: 62238

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 62272

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0998	0.07731		mg/Kg		77	70 - 130
Toluene	<0.00200	U	0.0998	0.08191		mg/Kg		82	70 - 130
Ethylbenzene	<0.00200	U	0.0998	0.09084		mg/Kg		91	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.1915		mg/Kg		96	70 - 130
o-Xylene	<0.00200	U	0.0998	0.09648		mg/Kg		97	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: 890-5226-A-1-C MSD
Matrix: Solid
Analysis Batch: 62238

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 62272

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	0.08297		mg/Kg		84	70 - 130	7	35
Toluene	<0.00200	U	0.0990	0.08431		mg/Kg		85	70 - 130	3	35
Ethylbenzene	<0.00200	U	0.0990	0.09286		mg/Kg		94	70 - 130	2	35
m-Xylene & p-Xylene	<0.00401	U	0.198	0.1940		mg/Kg		98	70 - 130	1	35
o-Xylene	<0.00200	U	0.0990	0.09744		mg/Kg		98	70 - 130	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	125		70 - 130
1,4-Difluorobenzene (Surr)	116		70 - 130

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

Lab Sample ID: MB 880-62268/1-A
Matrix: Solid
Analysis Batch: 62229

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62268

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		09/12/23 08:00	09/12/23 08:26	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		09/12/23 08:00	09/12/23 08:26	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/12/23 08:00	09/12/23 08:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130	09/12/23 08:00	09/12/23 08:26	1
o-Terphenyl	109		70 - 130	09/12/23 08:00	09/12/23 08:26	1

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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

Lab Sample ID: LCS 880-62268/2-A
Matrix: Solid
Analysis Batch: 62229

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62268

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1005		mg/Kg		101	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	963.8		mg/Kg		96	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*103*		*70 - 130*

Lab Sample ID: LCSD 880-62268/3-A
Matrix: Solid
Analysis Batch: 62229

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 62268

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1016		mg/Kg		102	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	976.3		mg/Kg		98	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*106*		*70 - 130*
o-Terphenyl	*100*		*70 - 130*

Lab Sample ID: 890-5224-A-11-D MS
Matrix: Solid
Analysis Batch: 62229

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 62268

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	999	946.3		mg/Kg		95	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.6	U	999	1288		mg/Kg		129	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*132*	*S1+*	*70 - 130*
o-Terphenyl	*102*		*70 - 130*

Lab Sample ID: 890-5224-A-11-E MSD
Matrix: Solid
Analysis Batch: 62229

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 62268

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	<49.6	U	999	956.5		mg/Kg		96	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.6	U	999	1296		mg/Kg		130	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*133*	*S1+*	*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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

Lab Sample ID: 890-5224-A-11-E MSD
Matrix: Solid
Analysis Batch: 62229

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 62268

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	103		70 - 130

Lab Sample ID: MB 880-62269/1-A
Matrix: Solid
Analysis Batch: 62231

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62269

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		09/12/23 08:00	09/12/23 08:26	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/23 08:00	09/12/23 08:26	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/23 08:00	09/12/23 08:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	117		70 - 130	09/12/23 08:00	09/12/23 08:26	1
o-Terphenyl	124		70 - 130	09/12/23 08:00	09/12/23 08:26	1

Lab Sample ID: LCS 880-62269/2-A
Matrix: Solid
Analysis Batch: 62231

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62269

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	946.4		mg/Kg		95	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	928.5		mg/Kg		93	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	105		70 - 130

Lab Sample ID: LCSD 880-62269/3-A
Matrix: Solid
Analysis Batch: 62231

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 62269

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	867.1		mg/Kg		87	70 - 130	9	20
Diesel Range Organics (Over C10-C28)			1000	919.8		mg/Kg		92	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	102		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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

Lab Sample ID: 890-5229-1 MS
Matrix: Solid
Analysis Batch: 62231

Client Sample ID: SS08A
Prep Type: Total/NA
Prep Batch: 62269

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	997	954.1		mg/Kg		93	70 - 130
Diesel Range Organics (Over C10-C28)	<50.3	U	997	1022		mg/Kg		98	70 - 130

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

Lab Sample ID: 890-5229-1 MSD
Matrix: Solid
Analysis Batch: 62231

Client Sample ID: SS08A
Prep Type: Total/NA
Prep Batch: 62269

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	<50.3	U	997	819.0		mg/Kg		80	70 - 130	15	20
Diesel Range Organics (Over C10-C28)	<50.3	U	997	936.5		mg/Kg		89	70 - 130	9	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*97*		*70 - 130*

Lab Sample ID: MB 880-62290/1-A
Matrix: Solid
Analysis Batch: 62306

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62290

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		09/12/23 16:24	09/13/23 08:10	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		09/12/23 16:24	09/13/23 08:10	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/12/23 16:24	09/13/23 08:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*132*	*S1+*	*70 - 130*	*09/12/23 16:24*	*09/13/23 08:10*	*1*
o-Terphenyl	*142*	*S1+*	*70 - 130*	*09/12/23 16:24*	*09/13/23 08:10*	*1*

Lab Sample ID: LCS 880-62290/2-A
Matrix: Solid
Analysis Batch: 62306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1115		mg/Kg		112	70 - 130
Diesel Range Organics (Over C10-C28)	1000	982.7		mg/Kg		98	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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

Lab Sample ID: LCS 880-62290/2-A
Matrix: Solid
Analysis Batch: 62306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62290

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	99		70 - 130
o-Terphenyl	111		70 - 130

Lab Sample ID: LCSD 880-62290/3-A
Matrix: Solid
Analysis Batch: 62306

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 62290

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	848.2	*1	mg/Kg		85	70 - 130	27	20
Diesel Range Organics (Over C10-C28)			1000	975.1		mg/Kg		98	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	108		70 - 130

Lab Sample ID: 890-5232-A-1-C MS
Matrix: Solid
Analysis Batch: 62306

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 62290

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.3	U *1	993	803.1		mg/Kg		76	70 - 130
Diesel Range Organics (Over C10-C28)	<50.3	U	993	874.9		mg/Kg		83	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	109		70 - 130

Lab Sample ID: 890-5232-A-1-D MSD
Matrix: Solid
Analysis Batch: 62306

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 62290

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	<50.3	U *1	993	799.3		mg/Kg		76	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<50.3	U	993	933.3		mg/Kg		89	70 - 130	6	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	120		70 - 130
o-Terphenyl	114		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-62349/1-A
Matrix: Solid
Analysis Batch: 62394

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			09/13/23 22:26	1

Lab Sample ID: LCS 880-62349/2-A
Matrix: Solid
Analysis Batch: 62394

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	250.8		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-62349/3-A
Matrix: Solid
Analysis Batch: 62394

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	248.6		mg/Kg		99	90 - 110	1	20

Lab Sample ID: 890-5226-A-12-D MS
Matrix: Solid
Analysis Batch: 62394

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	245		251	519.1		mg/Kg		110	90 - 110		

Lab Sample ID: 890-5226-A-12-E MSD
Matrix: Solid
Analysis Batch: 62394

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	245		251	516.5		mg/Kg		109	90 - 110	0	20

Lab Sample ID: MB 880-62368/1-A
Matrix: Solid
Analysis Batch: 62581

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			09/15/23 09:00	1

Lab Sample ID: LCS 880-62368/2-A
Matrix: Solid
Analysis Batch: 62581

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	252.2		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-62368/3-A
Matrix: Solid
Analysis Batch: 62581

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	251.5		mg/Kg		101	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 890-5229-13 MS
Matrix: Solid
Analysis Batch: 62581

Client Sample ID: SS11A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	37.4		251	296.8		mg/Kg		104	90 - 110		

Lab Sample ID: 890-5229-13 MSD
Matrix: Solid
Analysis Batch: 62581

Client Sample ID: SS11A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	37.4		251	295.1		mg/Kg		103	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

GC VOA

Prep Batch: 62129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-62129/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 62238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-21	SS16	Total/NA	Solid	8021B	62272
890-5229-22	SS16C	Total/NA	Solid	8021B	62272
MB 880-62129/5-A	Method Blank	Total/NA	Solid	8021B	62129
MB 880-62272/5-A	Method Blank	Total/NA	Solid	8021B	62272
LCS 880-62272/1-A	Lab Control Sample	Total/NA	Solid	8021B	62272
LCSD 880-62272/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	62272
890-5226-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	62272
890-5226-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	62272

Analysis Batch: 62265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-1	SS08A	Total/NA	Solid	8021B	62271
890-5229-2	SS07A	Total/NA	Solid	8021B	62271
890-5229-3	SS09A	Total/NA	Solid	8021B	62271
890-5229-4	SS10A	Total/NA	Solid	8021B	62271
890-5229-5	SS13	Total/NA	Solid	8021B	62271
890-5229-6	SS13A	Total/NA	Solid	8021B	62271
890-5229-7	SS17	Total/NA	Solid	8021B	62271
890-5229-8	SS17A	Total/NA	Solid	8021B	62271
890-5229-9	SS14	Total/NA	Solid	8021B	62271
890-5229-10	SS14A	Total/NA	Solid	8021B	62271
890-5229-11	SS12	Total/NA	Solid	8021B	62271
890-5229-12	SS12A	Total/NA	Solid	8021B	62271
890-5229-13	SS11A	Total/NA	Solid	8021B	62271
890-5229-14	SS06A	Total/NA	Solid	8021B	62271
890-5229-15	SS15	Total/NA	Solid	8021B	62271
890-5229-16	SS15C	Total/NA	Solid	8021B	62271
890-5229-17	SS18	Total/NA	Solid	8021B	62271
890-5229-18	SS18A	Total/NA	Solid	8021B	62271
890-5229-19	SS19	Total/NA	Solid	8021B	62271
890-5229-20	SS19A	Total/NA	Solid	8021B	62271
MB 880-62267/5-A	Method Blank	Total/NA	Solid	8021B	62267
MB 880-62271/5-A	Method Blank	Total/NA	Solid	8021B	62271
LCS 880-62271/1-A	Lab Control Sample	Total/NA	Solid	8021B	62271
LCSD 880-62271/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	62271
890-5229-1 MS	SS08A	Total/NA	Solid	8021B	62271
890-5229-1 MSD	SS08A	Total/NA	Solid	8021B	62271

Prep Batch: 62267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-62267/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 62271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-1	SS08A	Total/NA	Solid	5035	
890-5229-2	SS07A	Total/NA	Solid	5035	
890-5229-3	SS09A	Total/NA	Solid	5035	

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

GC VOA (Continued)

Prep Batch: 62271 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-4	SS10A	Total/NA	Solid	5035	
890-5229-5	SS13	Total/NA	Solid	5035	
890-5229-6	SS13A	Total/NA	Solid	5035	
890-5229-7	SS17	Total/NA	Solid	5035	
890-5229-8	SS17A	Total/NA	Solid	5035	
890-5229-9	SS14	Total/NA	Solid	5035	
890-5229-10	SS14A	Total/NA	Solid	5035	
890-5229-11	SS12	Total/NA	Solid	5035	
890-5229-12	SS12A	Total/NA	Solid	5035	
890-5229-13	SS11A	Total/NA	Solid	5035	
890-5229-14	SS06A	Total/NA	Solid	5035	
890-5229-15	SS15	Total/NA	Solid	5035	
890-5229-16	SS15C	Total/NA	Solid	5035	
890-5229-17	SS18	Total/NA	Solid	5035	
890-5229-18	SS18A	Total/NA	Solid	5035	
890-5229-19	SS19	Total/NA	Solid	5035	
890-5229-20	SS19A	Total/NA	Solid	5035	
MB 880-62271/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-62271/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-62271/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5229-1 MS	SS08A	Total/NA	Solid	5035	
890-5229-1 MSD	SS08A	Total/NA	Solid	5035	

Prep Batch: 62272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-21	SS16	Total/NA	Solid	5035	
890-5229-22	SS16C	Total/NA	Solid	5035	
MB 880-62272/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-62272/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-62272/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5226-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
890-5226-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 62357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-1	SS08A	Total/NA	Solid	Total BTEX	
890-5229-2	SS07A	Total/NA	Solid	Total BTEX	
890-5229-3	SS09A	Total/NA	Solid	Total BTEX	
890-5229-4	SS10A	Total/NA	Solid	Total BTEX	
890-5229-5	SS13	Total/NA	Solid	Total BTEX	
890-5229-6	SS13A	Total/NA	Solid	Total BTEX	
890-5229-7	SS17	Total/NA	Solid	Total BTEX	
890-5229-8	SS17A	Total/NA	Solid	Total BTEX	
890-5229-9	SS14	Total/NA	Solid	Total BTEX	
890-5229-10	SS14A	Total/NA	Solid	Total BTEX	
890-5229-11	SS12	Total/NA	Solid	Total BTEX	
890-5229-12	SS12A	Total/NA	Solid	Total BTEX	
890-5229-13	SS11A	Total/NA	Solid	Total BTEX	
890-5229-14	SS06A	Total/NA	Solid	Total BTEX	
890-5229-15	SS15	Total/NA	Solid	Total BTEX	
890-5229-16	SS15C	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

GC VOA (Continued)

Analysis Batch: 62357 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-17	SS18	Total/NA	Solid	Total BTEX	
890-5229-18	SS18A	Total/NA	Solid	Total BTEX	
890-5229-19	SS19	Total/NA	Solid	Total BTEX	
890-5229-20	SS19A	Total/NA	Solid	Total BTEX	
890-5229-21	SS16	Total/NA	Solid	Total BTEX	
890-5229-22	SS16C	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 62229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-21	SS16	Total/NA	Solid	8015B NM	62268
MB 880-62268/1-A	Method Blank	Total/NA	Solid	8015B NM	62268
LCS 880-62268/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	62268
LCSD 880-62268/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	62268
890-5224-A-11-D MS	Matrix Spike	Total/NA	Solid	8015B NM	62268
890-5224-A-11-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	62268

Analysis Batch: 62231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-1	SS08A	Total/NA	Solid	8015B NM	62269
890-5229-2	SS07A	Total/NA	Solid	8015B NM	62269
890-5229-3	SS09A	Total/NA	Solid	8015B NM	62269
890-5229-4	SS10A	Total/NA	Solid	8015B NM	62269
890-5229-5	SS13	Total/NA	Solid	8015B NM	62269
890-5229-6	SS13A	Total/NA	Solid	8015B NM	62269
890-5229-7	SS17	Total/NA	Solid	8015B NM	62269
890-5229-8	SS17A	Total/NA	Solid	8015B NM	62269
890-5229-9	SS14	Total/NA	Solid	8015B NM	62269
890-5229-10	SS14A	Total/NA	Solid	8015B NM	62269
890-5229-11	SS12	Total/NA	Solid	8015B NM	62269
890-5229-12	SS12A	Total/NA	Solid	8015B NM	62269
890-5229-13	SS11A	Total/NA	Solid	8015B NM	62269
890-5229-14	SS06A	Total/NA	Solid	8015B NM	62269
890-5229-15	SS15	Total/NA	Solid	8015B NM	62269
890-5229-16	SS15C	Total/NA	Solid	8015B NM	62269
890-5229-17	SS18	Total/NA	Solid	8015B NM	62269
890-5229-18	SS18A	Total/NA	Solid	8015B NM	62269
890-5229-19	SS19	Total/NA	Solid	8015B NM	62269
890-5229-20	SS19A	Total/NA	Solid	8015B NM	62269
MB 880-62269/1-A	Method Blank	Total/NA	Solid	8015B NM	62269
LCS 880-62269/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	62269
LCSD 880-62269/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	62269
890-5229-1 MS	SS08A	Total/NA	Solid	8015B NM	62269
890-5229-1 MSD	SS08A	Total/NA	Solid	8015B NM	62269

Prep Batch: 62268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-21	SS16	Total/NA	Solid	8015NM Prep	
MB 880-62268/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-62268/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

GC Semi VOA (Continued)

Prep Batch: 62268 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-62268/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5224-A-11-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5224-A-11-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 62269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-1	SS08A	Total/NA	Solid	8015NM Prep	
890-5229-2	SS07A	Total/NA	Solid	8015NM Prep	
890-5229-3	SS09A	Total/NA	Solid	8015NM Prep	
890-5229-4	SS10A	Total/NA	Solid	8015NM Prep	
890-5229-5	SS13	Total/NA	Solid	8015NM Prep	
890-5229-6	SS13A	Total/NA	Solid	8015NM Prep	
890-5229-7	SS17	Total/NA	Solid	8015NM Prep	
890-5229-8	SS17A	Total/NA	Solid	8015NM Prep	
890-5229-9	SS14	Total/NA	Solid	8015NM Prep	
890-5229-10	SS14A	Total/NA	Solid	8015NM Prep	
890-5229-11	SS12	Total/NA	Solid	8015NM Prep	
890-5229-12	SS12A	Total/NA	Solid	8015NM Prep	
890-5229-13	SS11A	Total/NA	Solid	8015NM Prep	
890-5229-14	SS06A	Total/NA	Solid	8015NM Prep	
890-5229-15	SS15	Total/NA	Solid	8015NM Prep	
890-5229-16	SS15C	Total/NA	Solid	8015NM Prep	
890-5229-17	SS18	Total/NA	Solid	8015NM Prep	
890-5229-18	SS18A	Total/NA	Solid	8015NM Prep	
890-5229-19	SS19	Total/NA	Solid	8015NM Prep	
890-5229-20	SS19A	Total/NA	Solid	8015NM Prep	
MB 880-62269/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-62269/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-62269/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5229-1 MS	SS08A	Total/NA	Solid	8015NM Prep	
890-5229-1 MSD	SS08A	Total/NA	Solid	8015NM Prep	

Prep Batch: 62290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-22	SS16C	Total/NA	Solid	8015NM Prep	
MB 880-62290/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-62290/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-62290/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5232-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-5232-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 62306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-22	SS16C	Total/NA	Solid	8015B NM	62290
MB 880-62290/1-A	Method Blank	Total/NA	Solid	8015B NM	62290
LCS 880-62290/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	62290
LCSD 880-62290/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	62290
890-5232-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	62290
890-5232-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	62290

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

GC Semi VOA

Analysis Batch: 62340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-1	SS08A	Total/NA	Solid	8015 NM	
890-5229-2	SS07A	Total/NA	Solid	8015 NM	
890-5229-3	SS09A	Total/NA	Solid	8015 NM	
890-5229-4	SS10A	Total/NA	Solid	8015 NM	
890-5229-5	SS13	Total/NA	Solid	8015 NM	
890-5229-6	SS13A	Total/NA	Solid	8015 NM	
890-5229-7	SS17	Total/NA	Solid	8015 NM	
890-5229-8	SS17A	Total/NA	Solid	8015 NM	
890-5229-9	SS14	Total/NA	Solid	8015 NM	
890-5229-10	SS14A	Total/NA	Solid	8015 NM	
890-5229-11	SS12	Total/NA	Solid	8015 NM	
890-5229-12	SS12A	Total/NA	Solid	8015 NM	
890-5229-13	SS11A	Total/NA	Solid	8015 NM	
890-5229-14	SS06A	Total/NA	Solid	8015 NM	
890-5229-15	SS15	Total/NA	Solid	8015 NM	
890-5229-16	SS15C	Total/NA	Solid	8015 NM	
890-5229-17	SS18	Total/NA	Solid	8015 NM	
890-5229-18	SS18A	Total/NA	Solid	8015 NM	
890-5229-19	SS19	Total/NA	Solid	8015 NM	
890-5229-20	SS19A	Total/NA	Solid	8015 NM	
890-5229-21	SS16	Total/NA	Solid	8015 NM	
890-5229-22	SS16C	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 62349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-1	SS08A	Soluble	Solid	DI Leach	
890-5229-2	SS07A	Soluble	Solid	DI Leach	
890-5229-3	SS09A	Soluble	Solid	DI Leach	
890-5229-4	SS10A	Soluble	Solid	DI Leach	
890-5229-5	SS13	Soluble	Solid	DI Leach	
MB 880-62349/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-62349/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-62349/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5226-A-12-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-5226-A-12-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Leach Batch: 62368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-6	SS13A	Soluble	Solid	DI Leach	
890-5229-7	SS17	Soluble	Solid	DI Leach	
890-5229-8	SS17A	Soluble	Solid	DI Leach	
890-5229-9	SS14	Soluble	Solid	DI Leach	
890-5229-10	SS14A	Soluble	Solid	DI Leach	
890-5229-11	SS12	Soluble	Solid	DI Leach	
890-5229-12	SS12A	Soluble	Solid	DI Leach	
890-5229-13	SS11A	Soluble	Solid	DI Leach	
890-5229-14	SS06A	Soluble	Solid	DI Leach	
890-5229-15	SS15	Soluble	Solid	DI Leach	
890-5229-16	SS15C	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

HPLC/IC (Continued)

Leach Batch: 62368 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-17	SS18	Soluble	Solid	DI Leach	
890-5229-18	SS18A	Soluble	Solid	DI Leach	
890-5229-19	SS19	Soluble	Solid	DI Leach	
890-5229-20	SS19A	Soluble	Solid	DI Leach	
890-5229-21	SS16	Soluble	Solid	DI Leach	
890-5229-22	SS16C	Soluble	Solid	DI Leach	
MB 880-62368/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-62368/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-62368/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-5229-13 MS	SS11A	Soluble	Solid	DI Leach	
890-5229-13 MSD	SS11A	Soluble	Solid	DI Leach	

Analysis Batch: 62394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-1	SS08A	Soluble	Solid	300.0	62349
890-5229-2	SS07A	Soluble	Solid	300.0	62349
890-5229-3	SS09A	Soluble	Solid	300.0	62349
890-5229-4	SS10A	Soluble	Solid	300.0	62349
890-5229-5	SS13	Soluble	Solid	300.0	62349
MB 880-62349/1-A	Method Blank	Soluble	Solid	300.0	62349
LCS 880-62349/2-A	Lab Control Sample	Soluble	Solid	300.0	62349
LCSD 880-62349/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	62349
890-5226-A-12-D MS	Matrix Spike	Soluble	Solid	300.0	62349
890-5226-A-12-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	62349

Analysis Batch: 62581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5229-6	SS13A	Soluble	Solid	300.0	62368
890-5229-7	SS17	Soluble	Solid	300.0	62368
890-5229-8	SS17A	Soluble	Solid	300.0	62368
890-5229-9	SS14	Soluble	Solid	300.0	62368
890-5229-10	SS14A	Soluble	Solid	300.0	62368
890-5229-11	SS12	Soluble	Solid	300.0	62368
890-5229-12	SS12A	Soluble	Solid	300.0	62368
890-5229-13	SS11A	Soluble	Solid	300.0	62368
890-5229-14	SS06A	Soluble	Solid	300.0	62368
890-5229-15	SS15	Soluble	Solid	300.0	62368
890-5229-16	SS15C	Soluble	Solid	300.0	62368
890-5229-17	SS18	Soluble	Solid	300.0	62368
890-5229-18	SS18A	Soluble	Solid	300.0	62368
890-5229-19	SS19	Soluble	Solid	300.0	62368
890-5229-20	SS19A	Soluble	Solid	300.0	62368
890-5229-21	SS16	Soluble	Solid	300.0	62368
890-5229-22	SS16C	Soluble	Solid	300.0	62368
MB 880-62368/1-A	Method Blank	Soluble	Solid	300.0	62368
LCS 880-62368/2-A	Lab Control Sample	Soluble	Solid	300.0	62368
LCSD 880-62368/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	62368
890-5229-13 MS	SS11A	Soluble	Solid	300.0	62368
890-5229-13 MSD	SS11A	Soluble	Solid	300.0	62368

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS08A
Date Collected: 09/07/23 13:10
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-1
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			5.02 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 03:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 03:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 12:06	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	62349	09/13/23 12:06	AG	EET MID
Soluble	Analysis	300.0		1			62394	09/14/23 01:12	CH	EET MID

Client Sample ID: SS07A
Date Collected: 09/07/23 14:00
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-2
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	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 03:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 13:11	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	62349	09/13/23 12:06	AG	EET MID
Soluble	Analysis	300.0		10			62394	09/14/23 01:18	CH	EET MID

Client Sample ID: SS09A
Date Collected: 09/08/23 09:45
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-3
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			5.03 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 04:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 13:32	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	62349	09/13/23 12:06	AG	EET MID
Soluble	Analysis	300.0		1			62394	09/14/23 01:25	CH	EET MID

Client Sample ID: SS10A
Date Collected: 09/08/23 10:20
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-4
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			5.01 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 04:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS10A
Date Collected: 09/08/23 10:20
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-4
Matrix: Solid

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			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 13:54	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	62349	09/13/23 12:06	AG	EET MID
Soluble	Analysis	300.0		1			62394	09/14/23 01:31	CH	EET MID

Client Sample ID: SS13
Date Collected: 09/08/23 10:40
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-5
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			4.99 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 05:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.07 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 14:17	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	62349	09/13/23 12:06	AG	EET MID
Soluble	Analysis	300.0		5			62394	09/14/23 01:37	CH	EET MID

Client Sample ID: SS13A
Date Collected: 09/08/23 10:50
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-6
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			5.01 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 05:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 14:38	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		5			62581	09/15/23 11:16	CH	EET MID

Client Sample ID: SS17
Date Collected: 09/08/23 11:20
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-7
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			4.97 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 06:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 15:00	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS17
Date Collected: 09/08/23 11:20
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.97 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		10			62581	09/17/23 11:59	CH	EET MID

Client Sample ID: SS17A
Date Collected: 09/08/23 11:30
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-8
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			4.96 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 06:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 15:22	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 11:38	CH	EET MID

Client Sample ID: SS14
Date Collected: 09/08/23 11:40
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-9
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			5.02 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 06:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 15:44	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 11:43	CH	EET MID

Client Sample ID: SS14A
Date Collected: 09/08/23 11:50
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-10
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			5.03 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 07:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 16:06	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 11:48	CH	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS12
Date Collected: 09/08/23 12:00
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-11
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	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 09:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 09:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 16:50	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 11:54	CH	EET MID

Client Sample ID: SS12A
Date Collected: 09/08/23 12:10
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-12
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			5.01 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 09:35	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 09:35	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 17:13	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 11:59	CH	EET MID

Client Sample ID: SS11A
Date Collected: 09/08/23 12:20
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-13
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			4.96 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 10:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 10:01	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 17:35	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 12:05	CH	EET MID

Client Sample ID: SS06A
Date Collected: 09/08/23 12:40
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-14
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	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 10:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 10:39	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS06A
Date Collected: 09/08/23 12:40
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-14
Matrix: Solid

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			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 17:56	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		5			62581	09/15/23 12:22	CH	EET MID

Client Sample ID: SS15
Date Collected: 09/08/23 12:50
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-15
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			5.02 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 11:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 11:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 18:18	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		5			62581	09/15/23 12:27	CH	EET MID

Client Sample ID: SS15C
Date Collected: 09/08/23 13:20
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-16
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	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 11:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 11:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 18:39	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		10			62581	09/15/23 12:45	CH	EET MID

Client Sample ID: SS18
Date Collected: 09/08/23 13:40
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-17
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			4.99 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 11:58	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 11:58	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 19:01	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS18
Date Collected: 09/08/23 13:40
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 12:51	CH	EET MID

Client Sample ID: SS18A
Date Collected: 09/08/23 13:50
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-18
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			5.02 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 12:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:24	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 19:22	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 12:57	CH	EET MID

Client Sample ID: SS19
Date Collected: 09/08/23 14:00
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-19
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			5.02 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 12:50	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:50	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 19:43	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 13:02	CH	EET MID

Client Sample ID: SS19A
Date Collected: 09/08/23 14:10
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-20
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			5.03 g	5 mL	62271	09/12/23 11:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62265	09/13/23 13:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 13:17	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	62269	09/12/23 11:30	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62231	09/12/23 20:05	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 13:08	CH	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Client Sample ID: SS16
Date Collected: 09/08/23 12:00
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-21
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			5.02 g	5 mL	62272	09/12/23 11:43	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62238	09/13/23 05:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/13/23 10:49	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	62268	09/12/23 11:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62229	09/12/23 20:05	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		1			62581	09/15/23 13:14	CH	EET MID

Client Sample ID: SS16C
Date Collected: 09/08/23 12:10
Date Received: 09/08/23 16:33

Lab Sample ID: 890-5229-22
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			5.03 g	5 mL	62272	09/12/23 11:43	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	62238	09/13/23 05:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			62357	09/13/23 12:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			62340	09/14/23 11:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	62290	09/12/23 16:24	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	62306	09/13/23 13:40	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	62368	09/13/23 14:27	AG	EET MID
Soluble	Analysis	300.0		5			62581	09/15/23 13:20	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: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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	T104704400-23-26	06-30-24

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

Method Summary

Client: Ensolum
Project/Site: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

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: Superman Frac Pond

Job ID: 890-5229-1
SDG: 03D2024221

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5229-1	SS08A	Solid	09/07/23 13:10	09/08/23 16:33	1.0
890-5229-2	SS07A	Solid	09/07/23 14:00	09/08/23 16:33	1.0
890-5229-3	SS09A	Solid	09/08/23 09:45	09/08/23 16:33	1.0
890-5229-4	SS10A	Solid	09/08/23 10:20	09/08/23 16:33	1.5
890-5229-5	SS13	Solid	09/08/23 10:40	09/08/23 16:33	0.5
890-5229-6	SS13A	Solid	09/08/23 10:50	09/08/23 16:33	3.0
890-5229-7	SS17	Solid	09/08/23 11:20	09/08/23 16:33	0.5
890-5229-8	SS17A	Solid	09/08/23 11:30	09/08/23 16:33	1.0
890-5229-9	SS14	Solid	09/08/23 11:40	09/08/23 16:33	0.5
890-5229-10	SS14A	Solid	09/08/23 11:50	09/08/23 16:33	1.0
890-5229-11	SS12	Solid	09/08/23 12:00	09/08/23 16:33	1.0
890-5229-12	SS12A	Solid	09/08/23 12:10	09/08/23 16:33	1.5
890-5229-13	SS11A	Solid	09/08/23 12:20	09/08/23 16:33	1.0
890-5229-14	SS06A	Solid	09/08/23 12:40	09/08/23 16:33	3.0
890-5229-15	SS15	Solid	09/08/23 12:50	09/08/23 16:33	0.5
890-5229-16	SS15C	Solid	09/08/23 13:20	09/08/23 16:33	1.0
890-5229-17	SS18	Solid	09/08/23 13:40	09/08/23 16:33	0.5
890-5229-18	SS18A	Solid	09/08/23 13:50	09/08/23 16:33	1.0
890-5229-19	SS19	Solid	09/08/23 14:00	09/08/23 16:33	0.5
890-5229-20	SS19A	Solid	09/08/23 14:10	09/08/23 16:33	1.0
890-5229-21	SS16	Solid	09/08/23 12:00	09/08/23 16:33	0.5
890-5229-22	SS16C	Solid	09/08/23 12:10	09/08/23 16:33	2.75

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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 3

Project Manager:	Hadlie Green	Bill to: (if different)	Hadlie Green
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:	432-557-8895	Email:	hgreen@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Superman Frac Pond	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2024221	Due Date:	
Project Location:	32.0158,-103.7133	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Peter Van Patten		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	TMA 007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	6.0	
Total Containers:		Corrected Temperature:	5.8	

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2SO_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

890-5229 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Sample Comments
SS08A	Soil	9/7/2023	1310	1.0'	Comp	1		x	x	x	
SS07A	Soil	9/7/2023	1400	1.75'	Comp	1		x	x	x	
SS09A	Soil	9/8/2023	945	1.0'	Comp	1		x	x	x	
SS10A	Soil	9/8/2023	1020	1.0'	Comp	1		x	x	x	
SS13	Soil	9/8/2023	1040	0.5'	Comp	1		x	x	x	
SS13A	Soil	9/8/2023	1050	1.0'	Comp	1		x	x	x	
SS17	Soil	9/8/2023	1120	0.5'	Comp	1		x	x	x	
SS17A	Soil	9/8/2023	1130	1.0'	Comp	1		x	x	x	
SS14	Soil	9/8/2023	1140	0.5'	Comp	1		x	x	x	
SS14A	Soil	9/8/2023	1150	1.0'	Comp	1		x	x	x	

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 Tl 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 Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Peter Van Patten	Abram	9-8-23 16:33	2		
3			4		
5			6		

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

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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 2 of 3

Project Manager:	Hadlie Green	Bill to: (if different)	Hadlie Green
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:	432-557-8895	Email:	hgreen@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Superman Frac Pond	Turn Around	
Project Number:	03D2024221	☑ Routine ☐ Rush	
Project Location:	32.0158,-103.7133	Due Date:	
Sampler's Name:	Peter Van Patten	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	
Total Containers:		Corrected Temperature:	

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Sample Comments
SS12	Soil	9/8/2023	1200	0.5'	Comp	1		x	x	x	
SS12A	Soil	9/8/2023	1210	1.0'	Comp	1		x	x	x	
SS11A	Soil	9/8/2023	1220	1.0'	Comp	1		x	x	x	
SS06A	Soil	9/8/2023	1240	1.5'	Comp	1		x	x	x	
SS15	Soil	9/8/2023	1250	0.5'	Comp	1		x	x	x	
SS15C	Soil	9/8/2023	1320	3.0'	Comp	1		x	x	x	
SS18	Soil	9/8/2023	1340	0.5'	Comp	1		x	x	x	
SS18A	Soil	9/8/2023	1350	1.0'	Comp	1		x	x	x	
SS19	Soil	9/8/2023	1400	0.5'	Comp	1		x	x	x	
SS19A	Soil	9/8/2023	1410	1.0'	Comp	1		x	x	x	

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 Tl 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 Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Peter Van Patten		9-8-23 16:23			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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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 3 of 3

Project Manager:	Hadlie Green	Bill to: (if different)	Hadlie Green
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:	432-557-8895	Email:	hgreen@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Superman Frac Pond	Turn Around	
Project Number:	03D2024221	☑ Routine ☐ Rush	
Project Location:	32.0158,-103.7133	Due Date:	
Sampler's Name:	Peter Van Patten	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	
Total Containers:		Corrected Temperature:	

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: CHLORIDES (EPA: 300.0)	Parameters: TPH (8015)	Parameters: BTEX (8021)	Sample Comments
SS16	Soil	9/8/2023	1200	0.5'	Comp	1		x	x	x	
SS16C	Soil	9/8/2023	1210	2.75'	Comp	1		x	x	x	

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 Tl 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 Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		9-8-23 16:37	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5229-1
SDG Number: 03D2024221

Login Number: 5229
List Number: 1
Creator: Lopez, Abraham

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: 890-5229-1
SDG Number: 03D2024221

Login Number: 5229
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/12/23 11:10 AM

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

ENSOLUM

APPENDIX E

NMOCD Notifications

From: Wells, Shelly, EMNRD
To: Hadlie Green
Cc: Bratcher, Michael, EMNRD; Velez, Nelson, EMNRD
Subject: RE: [EXTERNAL] COP - Sampling Notification (Week of 9/4/2023)
Date: Wednesday, August 30, 2023 4:53:32 PM
Attachments: image001.png
image002.png
image003.png
image004.png

[**EXTERNAL EMAIL**]

Hi Hadlie,

The OCD has received your notification. 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,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520|Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Hadlie Green <hgreen@ensolum.com>
Sent: Wednesday, August 30, 2023 3:23 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Carlile, Justin <Justin.Carlile@conocophillips.com>; Esparza, Brittany <brittany.esparza@conocophillips.com>; Peter Van Patten <pvanpatten@ensolum.com>
Subject: [EXTERNAL] COP - Sampling Notification (Week of 9/4/2023)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

ConocoPhillips Company (COP) plans to complete sampling activities at the following site the week of September 4, 2023.

- Superman Frac Pond / NAPP2320554259
  - Sampling Date: 9/7-8/2023 @ 0900 MST

Thank you,

Hadlie Green
Project Geologist
432-557-8895
hgreen@ensolum.com
Ensolum, LLC

ENSOLUM

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	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # *(assigned by OCD)*
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# *(if applicable)*

Unit Letter	Section	Township	Range	County

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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☐ The source of the release has been stopped.
☐ The impacted area has been secured to protect human health and the environment.
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☐ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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 _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Shelly Wells Date: 7/24/2023

Provide any known details about the event:	Vac Truck Contacted Water Line	Primary Cause (dropdown):	Impingement	Secondary Cause (dropdown):	Competency

	Was the Release to Soil / Caliche (dropdown):	Release On/Off Pad (dropdown):	Recovered Volume (bbl.) (if available, not included in volume calculations)	Release Type (dropdown):	Method of Determination (dropdown):
BU: Permian / Asset Area: DBE - Asset Avg.	Yes	Off-Pad	240 bbls	Produced Water	Field Measurement

Known Volume (dropdown):	No			
Known Area (dropdown):	Yes	Mapped Area (sq. ft.)	Average Depth (in.)	Total Estimated Volume of Spill (bbl.)
		133430	0.25	495.3183

District I
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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 243817

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 243817
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
scwells	None	7/24/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2320554259
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?	51-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring 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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2320554259
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: Justin Carlile Title: Senior Environmental Engineer

Signature: Date: 10/10/2023

email: JustinCarlile@conocophillips.com Telephone: 432-202-4112

OCD Only

Received by: Shelly Wells Date: 10/19/2023

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2320554259
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- [X] Detailed description of proposed remediation technique
- [X] Scaled sitemap with GPS coordinates showing delineation points
- [X] Estimated volume of material to be remediated
- [X] Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- [X] Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- [ ] Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- [ ] Extents of contamination must be fully delineated.
- [ ] Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and 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: Justin Carlile Title: Senior Environmental Engineer

Signature: Date: 10/10/2023

email: Justin.Carlile@conocophillips.com Telephone: 432-202-4112

OCD Only

Received by: Shelly Wells Date: 10/19/2023

- [ ] Approved
- [ ] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

Signature: Date:

District I
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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 277333

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 277333
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Remediation plan is approved as written. ConocoPhillips has until May 6, 2024 to submit to OCD its appropriate or final remediation closure report.	2/5/2024