July 27, 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
Vast State 021H
Incident Number NAPP2313140440
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of COG Operating, LLC (COG), has prepared the following *Remediation Work Plan (Work Plan)* to document the site assessment and soil sampling activities completed to date and propose a work plan to address the impacted soil identified at the Vast State 021H (Site). The purpose of the site assessment and soil sampling activities was to delineate the lateral and vertical extent of impacted soil resulting from a release of produced water and crude oil at the Site. The following *Work Plan* proposes to install a soil boring to investigate depth to water to confirm the Closure Criteria at the Site and excavate the impacted soil.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit P, Section 17, Township 26 South, Range 33 East, in Lea County, New Mexico (32.0367°, 103.5889°) and is associated with oil and gas exploration and production operations on State Land managed by the New Mexico State Land Office (NMSLO).

On May 6, 2023, corrosion of the back pressure line resulted in the release of 4.03 barrels (bbls) of produced water and 1.34 bbls of crude oil onto the surface of the well pad. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; approximately 1 bbl of produced water and 1 bbl of crude oil were recovered. COG reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on May 11, 2023. The release was assigned Incident Number NAPP2313140440.

Since the release remained on the active well pad, an assessment of cultural properties had already been completed prior to the construction of the well pad and as such, the Cultural Properties Protection Rule (CPP) has been followed. No additional cultural resource surveys were completed in connection with this release. The release area is not expected to be reclaimed until the oil and gas well is plugged and abandoned and the well pad is reclaimed. The Reclamation Plan for this release will default to the NMSLO-approved Reclamation Plan for the well pad per 19.2.100.67 of the New Mexico Administrative Code (NMAC).

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized according to Table I, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29 (19.15.29) 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 greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well C-02273 located approximately 0.85 miles southeast of the Site. The groundwater well has a reported depth to groundwater of 120 feet bgs and a total depth of 160 feet bgs. All wells used for depth to water 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 an intermittent stream, located approximately 4,876 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 1 Closure Criteria (Closure Criteria) apply:

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

SITE ASSESSMENT AND DELINEATION ACTIVITIES

On May 22, 2023, Ensolum personnel completed a Site visit to evaluate the release extent based on information provided on the Form C-141 and visual observations. The stained soil from the release had been scraped up prior to Ensolum personnel visiting the Site. Eight assessment soil samples (SS01 through SS08) were collected within and around the release extent from a depth of 0.5 feet bgs. Assessment soil samples SS01 through SS04 were collected around the release to confirm the lateral release extent. Assessment soil samples SS05 through SS08 were collected within the release extent at an approximate depth of 0.5 feet bgs. The assessment soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride 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 assessment soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following constituents of concern (COC): BTEX following United States

Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

On June 8, 2023, delineation activities were conducted at the Site to assess the vertical extent of impacted soil. Boreholes BH01 through BH03 were advanced via backhoe within the release extent. The boreholes were advanced to depths ranging from 2 feet to 5 feet bgs. Discrete delineation soil samples were collected from each borehole at depths ranging from 1-foot to 5 feet bgs. Soil from the boreholes was field screened for VOCs and chloride utilizing a calibrated PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the boreholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil samples were handled and analyzed as described above. The delineation soil sample locations are depicted on Figure 3.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for assessment soil samples SS01, SS02, and SS04, collected around the release extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and defined the lateral extent of the release to the north, west, and south. Laboratory analytical results for assessment soil sample SS03, collected east of the release extent, indicated all COC concentrations were compliant with the Site Closure Criteria; however, chloride concentrations exceeded the most stringent Table I Closure Criteria. One additional assessment sample (SS03A) was collected east of the release extent at a depth of approximately 0.5 feet bgs to confirm the lateral extent of the release. The assessment soil sample location is presented on Figure 2. Laboratory analytical results for assessment soil sample SS03A indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and successfully defined the lateral extent of the release to the east.

Laboratory analytical results for assessment soil samples SS05, SS06, and SS08, collected within the release extent, indicated all COC concentrations were compliant with the Site Closure Criteria. Laboratory analytical results for assessment soil sample SS07, collected within the release extent, indicated TPH-GRO/TPH-DRO concentrations exceeded the Site Closure Criteria.

Laboratory analytical results for the delineation soil samples collected from boreholes BH01 through BH03, indicated all COC concentrations were compliant with the Site Closure Criteria at depths ranging from 1-foot to 5 feet bgs, and successfully defined the vertical extent of the release. The laboratory analytical results are summarized on the attached Table 1 and the complete laboratory analytical reports are included in Appendix D. Based on the visible surface staining and laboratory analytical results for assessment sample SS07, excavation activities were warranted.

PROPOSED REMEDIATION WORK PLAN

In order to confirm depth to groundwater is greater than 100 feet bgs at the Site, COG proposes to advance a soil boring to a depth of 105 feet bgs. The soil boring will be located within 0.5 miles of the Site and a field geologist will log and describe soils continuously. The soil boring will be left open for over 72 hours to allow for equilibration of groundwater levels within the temporary boring casing. After the 72-hour waiting period, depth to groundwater will be assessed and the soil boring will be backfilled following New Mexico Office of the State Engineer (NMOSE) approved procedures. A well record or soil boring log will be included in the follow up Closure Report.

Following confirmation of depth to groundwater, COG will proceed with excavation of impacted soil on pad to below the established Site Closure Criteria. Based on the soil sample analytical results, an

estimated 14 cubic yards of impacted soil will be excavated from the well pad in the vicinity of assessment soil sample SS07.

- Following removal of the impacted soil, 5-point composite confirmation samples will be collected at least every 200 square feet from the sidewalls and floor of the excavation. 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 submitted for laboratory analysis of BTEX, TPH, and chloride as described above.

COG will complete the excavation activities within 90 days of the date of approval of this *Work Plan* by the NMOCD. The depth to water soil boring will be completed as soon as possible following approval from the surface landowner, receipt of the NMOSE drilling permit, and scheduling with a driller.

COG believes the scope of work described above will meet requirements set forth in 19.15.29.13 NMAC and is protective of human health, the environment, and groundwater. As such, COG respectfully requests approval of this *Work Plan* from NMOCD.

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

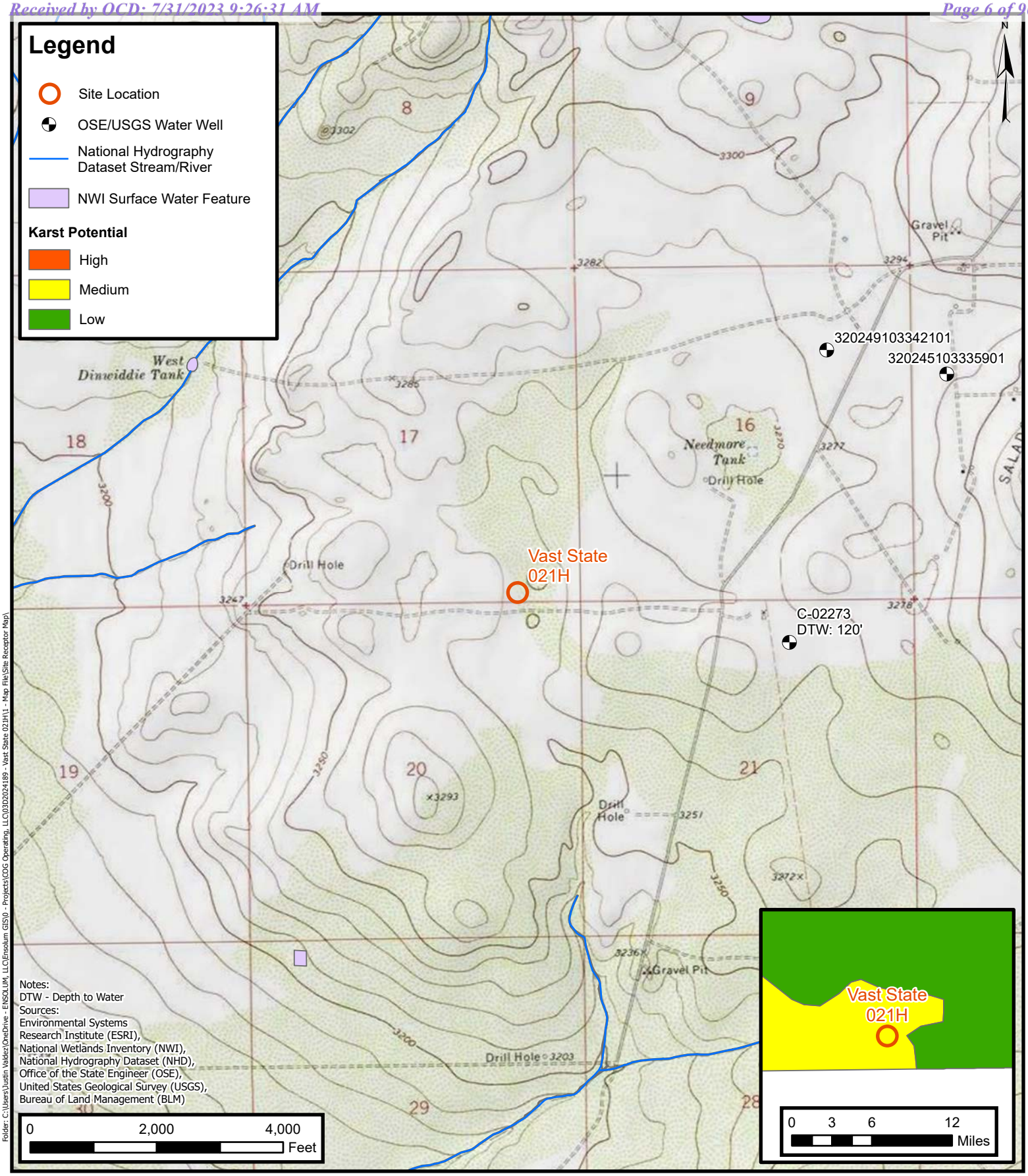
cc: Jacob Laird, COG
New Mexico State Land Office

Appendices:

Figure 1	Site Location Map
Figure 2	Assessment Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
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	Final C-141

ENSOLUM

FIGURES



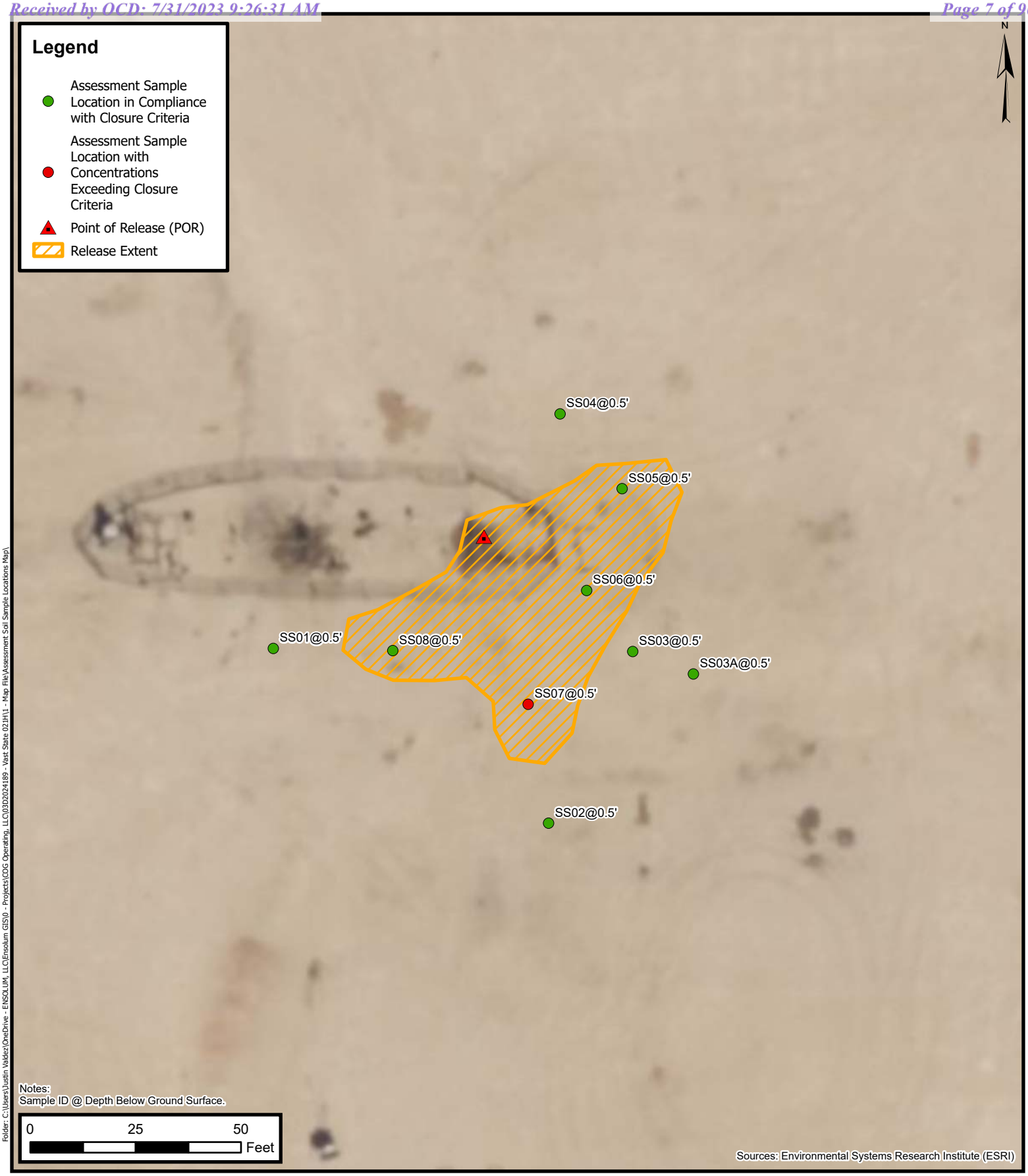
Folder: C:\Users\Justin Valdez\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\COG Operating, LLC\03202024189 - Vast State (021H)\1 - Map File\Site Receptor Map\

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

COG Operating, LLC
Vast State 021H
Incident Number: NAPP2313140440
Unit P Section 17 Township 26S Range 33E
County Lea, New Mexico

FIGURE 1



Folder: C:\Users\Justin Valdez\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\COG Operating, LLC\03202024189 - Vast State 021H\1 - Map File\Assessment Soil Sample Locations Map\

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Assessment Soil Sample Locations

COG Operating, LLC
Vast State 021H
Incident Number: NAPP2313140440
Unit P, Sec 17, T26S, R33E
Eddy County, New Mexico

FIGURE 2

Folder: C:\Users\Justin Valdez\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\COG Operating, LLC\03202024189 - Vast State 021H\1 - Map File\Delineation Soil Sample Locations Map\

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Delineation Soil Sample Locations

COG Operating, LLC
Vast State 021H
Incident Number: NAPP2313140440
Unit P, Sec 17, T26S, R33E
Eddy County, New Mexico

FIGURE 3

ENSOLUM

TABLES

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Vast State 021H
COG Operating, LLC
Lea County, New Mexico

Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			**10**	**50**	**NE**	**NE**	**NE**	**1,000**	**2,500**	**20,000**
Assessment Soil Samples										
SS01	05/22/2023	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	565
SS02	05/22/2023	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	571
SS03	05/22/2023	0.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	1,050
SS03A	06/08/2023	0.5	<0.00199	<0.00398	<49.9	27.9	<49.9	27.9	27.9	159
SS04	05/22/2023	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	477
SS05	05/22/2023	0.5	<0.00198	<0.00396	<49.8	550	<49.8	550	550	282
SS06	05/22/2023	0.5	<0.00199	<0.00398	<50.0	684	<50.0	684	684	3,440
SS07	05/22/2023	0.5	<0.00200	<0.00399	<50.0	1,920	<50.0	**1,920**	1,920	3,530
SS08	05/22/2023	0.5	<0.00201	<0.00402	<49.9	903	<49.9	903	903	1,530
Delineation Soil Samples										
BH01A	06/08/2023	1	<0.0020	<0.00400	<49.9	<49.9	<49.9	<49.9	<49.9	3,670
BH01D	06/08/2023	4	<0.0200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	1,240
BH01E	06/09/2023	5	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	<49.8	404
BH02A	06/08/2023	1	<0.00201	<0.00402	<50.0	156	<50.0	156	156	1,560
BH02D	06/09/2023	4	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	<49.9	246
BH03A	06/09/2023	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	551
BH03B	06/09/2023	2	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	250

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

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

Grey text represents samples that have been excavated

ENSOLUM

APPENDIX A

Referenced Well Records

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	C 02273	1	2		21	26S	33E	634549	3545134*

Driller License:	122	**Driller Company:**	UNKNOWN		
Driller Name:	UNKNOWN				
Drill Start Date:		**Drill Finish Date:**	12/31/1930	**Plug Date:**	
Log File Date:		**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	5 GPM
Casing Size:	6.00	**Depth Well:**	160 feet	**Depth Water:**	120 feet

***UTM location was derived from PLSS - see Help**

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 =
- 320245103335901

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

USGS 320245103335901 26S.33E.10.334343

Lea County, New Mexico
Latitude 32°02'45", Longitude 103°33'59" NAD27
Land-surface elevation 3,291 feet above NAVD88
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) 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
1970-12-07		D	62610		3162.10	NGVD29	P	Z		
1970-12-07		D	62611		3163.68	NAVD88	P	Z		
1970-12-07		D	72019	127.32			P	Z		
1976-01-08		D	62610		3165.46	NGVD29	1	Z		
1976-01-08		D	62611		3167.04	NAVD88	1	Z		
1976-01-08		D	72019	123.96			1	Z		
1981-03-25		D	62610		3165.27	NGVD29	1	Z		
1981-03-25		D	62611		3166.85	NAVD88	1	Z		
1981-03-25		D	72019	124.15			1	Z		
1986-03-04		D	62610		3165.01	NGVD29	1	Z		
1986-03-04		D	62611		3166.59	NAVD88	1	Z		
1986-03-04		D	72019	124.41			1	Z		
1990-11-27		D	62610		3164.82	NGVD29	1	Z		
1990-11-27		D	62611		3166.40	NAVD88	1	Z		
1990-11-27		D	72019	124.60			1	Z		

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
1996-03-05		D	62610		3164.92	NGVD29	1	S		
1996-03-05		D	62611		3166.50	NAVD88	1	S		
1996-03-05		D	72019	124.50			1	S		
2001-02-27		D	62610		3164.98	NGVD29	1	S		
2001-02-27		D	62611		3166.56	NAVD88	1	S		
2001-02-27		D	72019	124.44			1	S		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
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	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

ENSOLUM

APPENDIX B

Photographic Log

ENSOLUM

Photographic Log
COG Operating, LLC
Vast State 021H
Incident Number NAPP2313140440

Photograph: 1 Date: 5/6/2023
Description: Initial release extent
View: East

Photograph: 2 Date: 5/22/2023
Description: Initial assessment activities
View: West

Photograph: 3 Date: 6/8/2023
Description: Delineation activities
View: Northeast

Photograph: 4 Date: 6/8/2023
Description: Delineation activities
View: Northwest

ENSOLUM

APPENDIX C

Lithologic Soil Sampling Logs

ENSOLUM

	Sample Name: BH01	Date: 6/9/2023
	Site Name: Vast State 021H	
	Incident Number: NAPP2313140440	
	Job Number: 03D2024189	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Trackhoe
Coordinates: 32.036731,-103.589373	Hole Diameter:	Total Depth: 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. ND - Non Detect

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
Damp	3556	0.3	N	BH01A	1	1	SP-SM	Sand: brown, grey/brown, medium to fine grain, poorly graded, caliche gravel, trace odor
Damp	1730	3.5	N			2	SP-SM	SAA (same as above) slight hydrocarbon odor
Damp	1389	1.0	N			3	SP-SM	SAA trace hydrocarbon odor
Damp	1019	0.1	N	BH01D	4	4	CHHE	Caliche: Light tan, grey/tan, some brown fine grain sand
Damp	319	0.6	N	BH01E	5	5	CHHE	SAA
								TD 5 feet bgs
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: BH02	Date: 6/9/2023
	Site Name: Vast State 021H	
	Incident Number: NAPP2313140440	
	Job Number: 03D2024189	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Trackhoe
Coordinates: 32.036853,-103.589307	Hole Diameter:	Total Depth: 4'

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
						0		
Damp	1612	0.1	N	BH02A	1	1	SP-SM	Sand: brown, grey/brown, medium to fine grain, poorly graded, caliche gravel
Damp	940	0.1	N			2	SP-SM	SAA (same as above)
Damp	862	0.1	N			3	SP-SM	SAA
Damp	212	0.3	N	BH02D	4	4	CHHE	Caliche: Light tan, grey/tan, some brown fine grain sand
								TD 4 feet bgs
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

	Sample Name: BH03	Date: 6/9/2023
	Site Name: Vast State 021H	
	Incident Number: NAPP2313140440	
	Job Number: 03D2024189	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Peter Van Patten	Method: Trackhoe
Coordinates: 32.036773,-103.589473	Hole Diameter:	Total Depth: 3'

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
						0		
Damp	448	0.4	N	BH03A	1	1	SP-SM	Sand: brown, grey/brown, medium to fine grain, poorly graded, caliche gravel
Damp	212	0.3	N	BH03B	2	2	SP-SM	SAA (same as above)
Damp	212	0.3	N			3	SP-SM	SAA
								TD 3 feet bgs
						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 5/31/2023 9:52:34 AM

JOB DESCRIPTION

Vast State 21H
SDG NUMBER 03D2024189

JOB NUMBER

890-4710-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

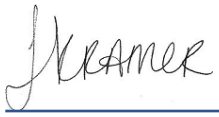
Eurofins Carlsbad

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



Generated
5/31/2023 9:52:34 AM

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

Client: Ensolum
Project/Site: Vast State 21H

Laboratory Job ID: 890-4710-1
SDG: 03D2024189

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4710-1
Project/Site: Vast State 21H SDG: 03D2024189

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1-	Surrogate recovery exceeds control limits, low biased.
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: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Job ID: 890-4710-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4710-1

Receipt
The samples were received on 5/23/2023 8:34 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 0.8°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-4710-1), SS02 (890-4710-2), SS03 (890-4710-3), SS04 (890-4710-4), SS05 (890-4710-5), SS06 (890-4710-6), SS07 (890-4710-7) and SS08 (890-4710-8).

GC VOA
Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-54106 and analytical batch 880-54208 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

Method 8021B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 880-54206 recovered outside control limits for the following analytes: Benzene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (CCV 880-54206/11). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-54098 and 880-54102 and analytical batch 880-54206 was outside the upper control limits.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-54206 recovered above the upper control limit for Benzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-54206/6). 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.

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-54080 and analytical batch 880-54026 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS01 (890-4710-1), SS02 (890-4710-2), SS03 (890-4710-3) and SS04 (890-4710-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS05 (890-4710-5), SS06 (890-4710-6), SS07 (890-4710-7) and SS08 (890-4710-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-54056 and analytical batch 880-54097 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.

Case Narrative

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Job ID: 890-4710-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

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: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS01

Date Collected: 05/22/23 11:30
Date Received: 05/23/23 08:34
Sample Depth: 0.5'

Lab Sample ID: 890-4710-1
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		05/24/23 15:24	05/27/23 17:08	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 17:08	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 17:08	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/24/23 15:24	05/27/23 17:08	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 17:08	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/24/23 15:24	05/27/23 17:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*05/24/23 15:24*	*05/27/23 17:08*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*05/24/23 15:24*	*05/27/23 17:08*	*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			05/31/23 10:19	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			05/25/23 11:47	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		05/24/23 12:56	05/25/23 00:52	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/24/23 12:56	05/25/23 00:52	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/24/23 12:56	05/25/23 00:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*135*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/25/23 00:52*	*1*
o-Terphenyl	*106*		*70 - 130*	*05/24/23 12:56*	*05/25/23 00:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**565**		5.03		mg/Kg			05/25/23 15:11	1

Client Sample ID: SS02

Date Collected: 05/22/23 11:45
Date Received: 05/23/23 08:34
Sample Depth: 0.5'

Lab Sample ID: 890-4710-2
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		05/24/23 15:24	05/27/23 17:35	1
Toluene	<0.00201	U	0.00201		mg/Kg		05/24/23 15:24	05/27/23 17:35	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		05/24/23 15:24	05/27/23 17:35	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		05/24/23 15:24	05/27/23 17:35	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		05/24/23 15:24	05/27/23 17:35	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		05/24/23 15:24	05/27/23 17:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*05/24/23 15:24*	*05/27/23 17:35*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS02

Date Collected: 05/22/23 11:45
Date Received: 05/23/23 08:34
Sample Depth: 0.5'

Lab Sample ID: 890-4710-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*05/24/23 15:24*	*05/27/23 17:35*	*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			05/31/23 10:19	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			05/25/23 11:47	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		05/24/23 12:56	05/25/23 01:14	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		05/24/23 12:56	05/25/23 01:14	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/24/23 12:56	05/25/23 01:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*137*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/25/23 01:14*	*1*
o-Terphenyl	*108*		*70 - 130*	*05/24/23 12:56*	*05/25/23 01:14*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**571**		4.99	mg/Kg			05/25/23 15:17	1

Client Sample ID: SS03

Date Collected: 05/22/23 11:40
Date Received: 05/23/23 08:34
Sample Depth: 0.5'

Lab Sample ID: 890-4710-3
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		05/24/23 15:24	05/27/23 18:02	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/24/23 15:24	05/27/23 18:02	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/24/23 15:24	05/27/23 18:02	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		05/24/23 15:24	05/27/23 18:02	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/24/23 15:24	05/27/23 18:02	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/24/23 15:24	05/27/23 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*05/24/23 15:24*	*05/27/23 18:02*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*05/24/23 15:24*	*05/27/23 18:02*	*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			05/31/23 10:19	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			05/25/23 11:47	1

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS03

Lab Sample ID: 890-4710-3
Matrix: Solid
Date Collected: 05/22/23 11:40
Date Received: 05/23/23 08:34
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	<49.9	U	49.9		mg/Kg		05/24/23 12:56	05/25/23 01:35	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/24/23 12:56	05/25/23 01:35	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/24/23 12:56	05/25/23 01:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*138*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/25/23 01:35*	*1*
o-Terphenyl	*108*		*70 - 130*	*05/24/23 12:56*	*05/25/23 01:35*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1050**		24.9		mg/Kg			05/25/23 15:49	5

Client Sample ID: SS04

Lab Sample ID: 890-4710-4
Matrix: Solid
Date Collected: 05/22/23 11:05
Date Received: 05/23/23 08:34
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		05/24/23 15:24	05/27/23 18:29	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 18:29	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 18:29	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/24/23 15:24	05/27/23 18:29	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 18:29	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/24/23 15:24	05/27/23 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*05/24/23 15:24*	*05/27/23 18:29*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*05/24/23 15:24*	*05/27/23 18:29*	*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			05/31/23 10:19	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			05/25/23 11:47	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		05/24/23 12:56	05/25/23 01:56	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/24/23 12:56	05/25/23 01:56	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/24/23 12:56	05/25/23 01:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*136*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/25/23 01:56*	*1*
o-Terphenyl	*107*		*70 - 130*	*05/24/23 12:56*	*05/25/23 01:56*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS04

Lab Sample ID: 890-4710-4
Matrix: Solid
Date Collected: 05/22/23 11:05
Date Received: 05/23/23 08:34
Sample Depth: 0.5'

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**477**		4.97		mg/Kg			05/25/23 15:55	1

Client Sample ID: SS05

Lab Sample ID: 890-4710-5
Matrix: Solid
Date Collected: 05/22/23 11:10
Date Received: 05/23/23 08:34
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		05/24/23 15:24	05/27/23 18:56	1
Toluene	<0.00198	U	0.00198		mg/Kg		05/24/23 15:24	05/27/23 18:56	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		05/24/23 15:24	05/27/23 18:56	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		05/24/23 15:24	05/27/23 18:56	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		05/24/23 15:24	05/27/23 18:56	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		05/24/23 15:24	05/27/23 18:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*05/24/23 15:24*	*05/27/23 18:56*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*05/24/23 15:24*	*05/27/23 18:56*	*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			05/31/23 10:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**550**		49.8		mg/Kg			05/25/23 11:47	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		05/24/23 12:56	05/25/23 02:39	1
Diesel Range Organics (Over C10-C28)	**550**		49.8		mg/Kg		05/24/23 12:56	05/25/23 02:39	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		05/24/23 12:56	05/25/23 02:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*141*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/25/23 02:39*	*1*
o-Terphenyl	*109*		*70 - 130*	*05/24/23 12:56*	*05/25/23 02:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**282**		5.03		mg/Kg			05/25/23 16:00	1

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS06

Lab Sample ID: 890-4710-6
Matrix: Solid
Date Collected: 05/22/23 11:15
Date Received: 05/23/23 08:34
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		05/24/23 15:24	05/27/23 19:23	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 19:23	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 19:23	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/24/23 15:24	05/27/23 19:23	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/24/23 15:24	05/27/23 19:23	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/24/23 15:24	05/27/23 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*05/24/23 15:24*	*05/27/23 19:23*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*05/24/23 15:24*	*05/27/23 19:23*	*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			05/31/23 10:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**684**		50.0		mg/Kg			05/25/23 11:47	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		05/24/23 12:56	05/25/23 03:00	1
Diesel Range Organics (Over C10-C28)	**684**		50.0		mg/Kg		05/24/23 12:56	05/25/23 03:00	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/24/23 12:56	05/25/23 03:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*144*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/25/23 03:00*	*1*
o-Terphenyl	*113*		*70 - 130*	*05/24/23 12:56*	*05/25/23 03:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3440**		50.5		mg/Kg			05/25/23 16:06	10

Client Sample ID: SS07

Lab Sample ID: 890-4710-7
Matrix: Solid
Date Collected: 05/22/23 11:20
Date Received: 05/23/23 08:34
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		05/24/23 15:24	05/27/23 19:50	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:24	05/27/23 19:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:24	05/27/23 19:50	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		05/24/23 15:24	05/27/23 19:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:24	05/27/23 19:50	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		05/24/23 15:24	05/27/23 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*05/24/23 15:24*	*05/27/23 19:50*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS07

Date Collected: 05/22/23 11:20
Date Received: 05/23/23 08:34
Sample Depth: 0.5'

Lab Sample ID: 890-4710-7
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*05/24/23 15:24*	*05/27/23 19:50*	*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			05/31/23 10:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**1920**		50.0		mg/Kg			05/25/23 11:47	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		05/24/23 12:56	05/25/23 03:21	1
Diesel Range Organics (Over C10-C28)	**1920**		50.0		mg/Kg		05/24/23 12:56	05/25/23 03:21	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/24/23 12:56	05/25/23 03:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*137*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/25/23 03:21*	*1*
o-Terphenyl	*106*		*70 - 130*	*05/24/23 12:56*	*05/25/23 03:21*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3530**		25.1		mg/Kg			05/25/23 16:11	5

Client Sample ID: SS08

Date Collected: 05/22/23 11:25
Date Received: 05/23/23 08:34
Sample Depth: 0.5'

Lab Sample ID: 890-4710-8
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		05/24/23 13:32	05/26/23 20:29	1
Toluene	<0.00201	U	0.00201		mg/Kg		05/24/23 13:32	05/26/23 20:29	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		05/24/23 13:32	05/26/23 20:29	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		05/24/23 13:32	05/26/23 20:29	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		05/24/23 13:32	05/26/23 20:29	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		05/24/23 13:32	05/26/23 20:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*05/24/23 13:32*	*05/26/23 20:29*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*05/24/23 13:32*	*05/26/23 20:29*	*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			05/30/23 09:08	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**903**		49.9		mg/Kg			05/25/23 11:47	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS08

Date Collected: 05/22/23 11:25
Date Received: 05/23/23 08:34
Sample Depth: 0.5'

Lab Sample ID: 890-4710-8

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	<49.9	U	49.9		mg/Kg		05/24/23 12:56	05/25/23 06:35	1
Diesel Range Organics (Over C10-C28)	**903**		49.9		mg/Kg		05/24/23 12:56	05/25/23 06:35	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/24/23 12:56	05/25/23 06:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*145*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/25/23 06:35*	*1*
o-Terphenyl	*111*		*70 - 130*	*05/24/23 12:56*	*05/25/23 06:35*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1530**		25.2		mg/Kg			05/25/23 16:16	5

Surrogate Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

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)
890-4707-A-21-C MS	Matrix Spike	84	105
890-4707-A-21-D MSD	Matrix Spike Duplicate	85	98
890-4710-1	SS01	93	99
890-4710-2	SS02	85	108
890-4710-3	SS03	88	105
890-4710-4	SS04	96	104
890-4710-5	SS05	87	99
890-4710-6	SS06	91	109
890-4710-7	SS07	91	102
890-4710-8	SS08	95	89
890-4711-A-1-G MS	Matrix Spike	92	100
890-4711-A-1-H MSD	Matrix Spike Duplicate	93	101
LCS 880-54083/1-A	Lab Control Sample	97	105
LCS 880-54098/1-A	Lab Control Sample	80	118
LCS 880-54106/1-A	Lab Control Sample	92	95
LCSD 880-54083/2-A	Lab Control Sample Dup	96	98
LCSD 880-54098/2-A	Lab Control Sample Dup	81	107
LCSD 880-54106/2-A	Lab Control Sample Dup	93	118
MB 880-54083/5-A	Method Blank	87	104
MB 880-54098/5-A	Method Blank	53 S1-	100
MB 880-54102/5-A	Method Blank	51 S1-	98

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)
890-4709-A-2-C MS	Matrix Spike	118	85
890-4709-A-2-D MSD	Matrix Spike Duplicate	121	87
890-4710-1	SS01	135 S1+	106
890-4710-2	SS02	137 S1+	108
890-4710-3	SS03	138 S1+	108
890-4710-4	SS04	136 S1+	107
890-4710-5	SS05	141 S1+	109
890-4710-6	SS06	144 S1+	113
890-4710-7	SS07	137 S1+	106
890-4710-8	SS08	145 S1+	111
LCS 880-54080/2-A	Lab Control Sample	103	79
LCSD 880-54080/3-A	Lab Control Sample Dup	103	79
MB 880-54080/1-A	Method Blank	170 S1+	138 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-54083/5-A
Matrix: Solid
Analysis Batch: 54208

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54083

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/24/23 13:32	05/26/23 12:02	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/24/23 13:32	05/26/23 12:02	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/24/23 13:32	05/26/23 12:02	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/24/23 13:32	05/26/23 12:02	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/24/23 13:32	05/26/23 12:02	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/24/23 13:32	05/26/23 12:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*05/24/23 13:32*	*05/26/23 12:02*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*05/24/23 13:32*	*05/26/23 12:02*	*1*

Lab Sample ID: LCS 880-54083/1-A
Matrix: Solid
Analysis Batch: 54208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54083

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1228		mg/Kg		123	70 - 130		
Toluene			0.100	0.1146		mg/Kg		115	70 - 130		
Ethylbenzene			0.100	0.1040		mg/Kg		104	70 - 130		
m-Xylene & p-Xylene			0.200	0.2201		mg/Kg		110	70 - 130		
o-Xylene			0.100	0.1007		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 880-54083/2-A
Matrix: Solid
Analysis Batch: 54208

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54083

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1211		mg/Kg		121	70 - 130	1	35
Toluene			0.100	0.1152		mg/Kg		115	70 - 130	1	35
Ethylbenzene			0.100	0.1081		mg/Kg		108	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.2237		mg/Kg		112	70 - 130	2	35
o-Xylene			0.100	0.1018		mg/Kg		102	70 - 130	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: MB 880-54098/5-A
Matrix: Solid
Analysis Batch: 54206

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54098

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:24	05/27/23 07:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:24	05/27/23 07:23	1

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

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

Lab Sample ID: MB 880-54098/5-A
Matrix: Solid
Analysis Batch: 54206

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54098

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:24	05/27/23 07:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/24/23 15:24	05/27/23 07:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:24	05/27/23 07:23	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/24/23 15:24	05/27/23 07:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*53*	*S1-*	*70 - 130*	*05/24/23 15:24*	*05/27/23 07:23*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*05/24/23 15:24*	*05/27/23 07:23*	*1*

Lab Sample ID: LCS 880-54098/1-A
Matrix: Solid
Analysis Batch: 54206

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54098

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1225		mg/Kg		123	70 - 130		
Toluene			0.100	0.1063		mg/Kg		106	70 - 130		
Ethylbenzene			0.100	0.1001		mg/Kg		100	70 - 130		
m-Xylene & p-Xylene			0.200	0.1944		mg/Kg		97	70 - 130		
o-Xylene			0.100	0.09737		mg/Kg		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*

Lab Sample ID: LCSD 880-54098/2-A
Matrix: Solid
Analysis Batch: 54206

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54098

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1289		mg/Kg		129	70 - 130	5	35
Toluene			0.100	0.1105		mg/Kg		110	70 - 130	4	35
Ethylbenzene			0.100	0.1071		mg/Kg		107	70 - 130	7	35
m-Xylene & p-Xylene			0.200	0.2100		mg/Kg		105	70 - 130	8	35
o-Xylene			0.100	0.1070		mg/Kg		107	70 - 130	9	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-4707-A-21-C MS
Matrix: Solid
Analysis Batch: 54206

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54098

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U	0.0998	0.1210		mg/Kg		121	70 - 130		
Toluene	<0.00199	U	0.0998	0.1091		mg/Kg		109	70 - 130		
Ethylbenzene	<0.00199	U	0.0998	0.1058		mg/Kg		106	70 - 130		
m-Xylene & p-Xylene	<0.00398	U	0.200	0.2034		mg/Kg		102	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

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

Lab Sample ID: 890-4707-A-21-C MS
Matrix: Solid
Analysis Batch: 54206

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54098

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	<0.00199	U	0.0998	0.1001		mg/Kg		100	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: 890-4707-A-21-D MSD
Matrix: Solid
Analysis Batch: 54206

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 54098

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.1191		mg/Kg		119	70 - 130	2	35
Toluene	<0.00199	U	0.100	0.1091		mg/Kg		109	70 - 130	0	35
Ethylbenzene	<0.00199	U	0.100	0.1025		mg/Kg		102	70 - 130	3	35
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1976		mg/Kg		98	70 - 130	3	35
o-Xylene	<0.00199	U	0.100	0.09868		mg/Kg		98	70 - 130	1	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: MB 880-54102/5-A
Matrix: Solid
Analysis Batch: 54206

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54102

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:59	05/26/23 17:47	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:59	05/26/23 17:47	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:59	05/26/23 17:47	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/24/23 15:59	05/26/23 17:47	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/24/23 15:59	05/26/23 17:47	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/24/23 15:59	05/26/23 17:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*51*	*S1-*	*70 - 130*	*05/24/23 15:59*	*05/26/23 17:47*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*05/24/23 15:59*	*05/26/23 17:47*	*1*

Lab Sample ID: LCS 880-54106/1-A
Matrix: Solid
Analysis Batch: 54208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1347	*+	mg/Kg		135	70 - 130
Toluene	0.100	0.1126		mg/Kg		113	70 - 130
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2200		mg/Kg		110	70 - 130
o-Xylene	0.100	0.09833		mg/Kg		98	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

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

Lab Sample ID: LCS 880-54106/1-A
Matrix: Solid
Analysis Batch: 54208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54106

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-54106/2-A
Matrix: Solid
Analysis Batch: 54208

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54106

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1464	*+	mg/Kg		146	70 - 130	8	35
Toluene			0.100	0.1194		mg/Kg		119	70 - 130	6	35
Ethylbenzene			0.100	0.1123		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene			0.200	0.2245		mg/Kg		112	70 - 130	2	35
o-Xylene			0.100	0.1025		mg/Kg		103	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		70 - 130
1,4-Difluorobenzene (Surr)	118		70 - 130

Lab Sample ID: 890-4711-A-1-G MS
Matrix: Solid
Analysis Batch: 54208

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54106

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U *+	0.0998	0.1293		mg/Kg		130	70 - 130
Toluene	<0.00201	U	0.0998	0.1087		mg/Kg		108	70 - 130
Ethylbenzene	<0.00201	U	0.0998	0.1031		mg/Kg		103	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2005		mg/Kg		100	70 - 130
o-Xylene	<0.00201	U	0.0998	0.08897		mg/Kg		89	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-4711-A-1-H MSD
Matrix: Solid
Analysis Batch: 54208

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 54106

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U *+	0.100	0.1225		mg/Kg		122	70 - 130	5	35
Toluene	<0.00201	U	0.100	0.1038		mg/Kg		103	70 - 130	5	35
Ethylbenzene	<0.00201	U	0.100	0.09474		mg/Kg		95	70 - 130	8	35
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1908		mg/Kg		95	70 - 130	5	35
o-Xylene	<0.00201	U	0.100	0.08602		mg/Kg		86	70 - 130	3	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

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

Lab Sample ID: MB 880-54080/1-A
Matrix: Solid
Analysis Batch: 54026

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54080

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		05/24/23 12:56	05/24/23 20:56	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/24/23 12:56	05/24/23 20:56	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/24/23 12:56	05/24/23 20:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*170*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/24/23 20:56*	*1*
o-Terphenyl	*138*	*S1+*	*70 - 130*	*05/24/23 12:56*	*05/24/23 20:56*	*1*

Lab Sample ID: LCS 880-54080/2-A
Matrix: Solid
Analysis Batch: 54026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54080

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	916.4		mg/Kg		92	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	954.6		mg/Kg		95	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*79*		*70 - 130*

Lab Sample ID: LCSD 880-54080/3-A
Matrix: Solid
Analysis Batch: 54026

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54080

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	853.2		mg/Kg		85	70 - 130	7	20
Diesel Range Organics (Over C10-C28)			1000	878.9		mg/Kg		88	70 - 130	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*79*		*70 - 130*

Lab Sample ID: 890-4709-A-2-C MS
Matrix: Solid
Analysis Batch: 54026

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54080

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	876.3		mg/Kg		88	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	996	788.5		mg/Kg		79	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

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

Lab Sample ID: 890-4709-A-2-C MS
Matrix: Solid
Analysis Batch: 54026

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 54080

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 890-4709-A-2-D MSD
Matrix: Solid
Analysis Batch: 54026

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 54080

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	888.8		mg/Kg		89	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.9	U	996	815.5		mg/Kg		82	70 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	121		70 - 130
o-Terphenyl	87		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-54056/1-A
Matrix: Solid
Analysis Batch: 54097

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			05/25/23 12:17	1

Lab Sample ID: LCS 880-54056/2-A
Matrix: Solid
Analysis Batch: 54097

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	258.5		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-54056/3-A
Matrix: Solid
Analysis Batch: 54097

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	257.5		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 890-4708-A-1-B MS
Matrix: Solid
Analysis Batch: 54097

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	53.3		249	282.6		mg/Kg		92	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-4708-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 54097

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	53.3		249	280.7		mg/Kg		91	90 - 110	1	20

Lab Sample ID: 890-4709-A-7-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 54097

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	11100	F1	4950	17090	F1	mg/Kg		121	90 - 110

Lab Sample ID: 890-4709-A-7-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 54097

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11100	F1	4950	16850	F1	mg/Kg		116	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

GC VOA

Prep Batch: 54083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-8	SS08	Total/NA	Solid	5035	
MB 880-54083/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-54083/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-54083/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 54098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-1	SS01	Total/NA	Solid	5035	
890-4710-2	SS02	Total/NA	Solid	5035	
890-4710-3	SS03	Total/NA	Solid	5035	
890-4710-4	SS04	Total/NA	Solid	5035	
890-4710-5	SS05	Total/NA	Solid	5035	
890-4710-6	SS06	Total/NA	Solid	5035	
890-4710-7	SS07	Total/NA	Solid	5035	
MB 880-54098/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-54098/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-54098/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4707-A-21-C MS	Matrix Spike	Total/NA	Solid	5035	
890-4707-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 54102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-54102/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 54106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-54106/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-54106/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4711-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-4711-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 54206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-1	SS01	Total/NA	Solid	8021B	54098
890-4710-2	SS02	Total/NA	Solid	8021B	54098
890-4710-3	SS03	Total/NA	Solid	8021B	54098
890-4710-4	SS04	Total/NA	Solid	8021B	54098
890-4710-5	SS05	Total/NA	Solid	8021B	54098
890-4710-6	SS06	Total/NA	Solid	8021B	54098
890-4710-7	SS07	Total/NA	Solid	8021B	54098
MB 880-54098/5-A	Method Blank	Total/NA	Solid	8021B	54098
MB 880-54102/5-A	Method Blank	Total/NA	Solid	8021B	54102
LCS 880-54098/1-A	Lab Control Sample	Total/NA	Solid	8021B	54098
LCSD 880-54098/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	54098
890-4707-A-21-C MS	Matrix Spike	Total/NA	Solid	8021B	54098
890-4707-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	54098

Analysis Batch: 54208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-8	SS08	Total/NA	Solid	8021B	54083
MB 880-54083/5-A	Method Blank	Total/NA	Solid	8021B	54083

QC Association Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

GC VOA (Continued)

Analysis Batch: 54208 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-54083/1-A	Lab Control Sample	Total/NA	Solid	8021B	54083
LCS 880-54106/1-A	Lab Control Sample	Total/NA	Solid	8021B	54106
LCSD 880-54083/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	54083
LCSD 880-54106/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	54106
890-4711-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	54106
890-4711-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	54106

Analysis Batch: 54349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-1	SS01	Total/NA	Solid	Total BTEX	
890-4710-2	SS02	Total/NA	Solid	Total BTEX	
890-4710-3	SS03	Total/NA	Solid	Total BTEX	
890-4710-4	SS04	Total/NA	Solid	Total BTEX	
890-4710-5	SS05	Total/NA	Solid	Total BTEX	
890-4710-6	SS06	Total/NA	Solid	Total BTEX	
890-4710-7	SS07	Total/NA	Solid	Total BTEX	
890-4710-8	SS08	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 54026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-1	SS01	Total/NA	Solid	8015B NM	54080
890-4710-2	SS02	Total/NA	Solid	8015B NM	54080
890-4710-3	SS03	Total/NA	Solid	8015B NM	54080
890-4710-4	SS04	Total/NA	Solid	8015B NM	54080
890-4710-5	SS05	Total/NA	Solid	8015B NM	54080
890-4710-6	SS06	Total/NA	Solid	8015B NM	54080
890-4710-7	SS07	Total/NA	Solid	8015B NM	54080
890-4710-8	SS08	Total/NA	Solid	8015B NM	54080
MB 880-54080/1-A	Method Blank	Total/NA	Solid	8015B NM	54080
LCS 880-54080/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	54080
LCSD 880-54080/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	54080
890-4709-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	54080
890-4709-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	54080

Prep Batch: 54080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-1	SS01	Total/NA	Solid	8015NM Prep	
890-4710-2	SS02	Total/NA	Solid	8015NM Prep	
890-4710-3	SS03	Total/NA	Solid	8015NM Prep	
890-4710-4	SS04	Total/NA	Solid	8015NM Prep	
890-4710-5	SS05	Total/NA	Solid	8015NM Prep	
890-4710-6	SS06	Total/NA	Solid	8015NM Prep	
890-4710-7	SS07	Total/NA	Solid	8015NM Prep	
890-4710-8	SS08	Total/NA	Solid	8015NM Prep	
MB 880-54080/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-54080/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-54080/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4709-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4709-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

GC Semi VOA

Analysis Batch: 54164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-1	SS01	Total/NA	Solid	8015 NM	
890-4710-2	SS02	Total/NA	Solid	8015 NM	
890-4710-3	SS03	Total/NA	Solid	8015 NM	
890-4710-4	SS04	Total/NA	Solid	8015 NM	
890-4710-5	SS05	Total/NA	Solid	8015 NM	
890-4710-6	SS06	Total/NA	Solid	8015 NM	
890-4710-7	SS07	Total/NA	Solid	8015 NM	
890-4710-8	SS08	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 54056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-1	SS01	Soluble	Solid	DI Leach	
890-4710-2	SS02	Soluble	Solid	DI Leach	
890-4710-3	SS03	Soluble	Solid	DI Leach	
890-4710-4	SS04	Soluble	Solid	DI Leach	
890-4710-5	SS05	Soluble	Solid	DI Leach	
890-4710-6	SS06	Soluble	Solid	DI Leach	
890-4710-7	SS07	Soluble	Solid	DI Leach	
890-4710-8	SS08	Soluble	Solid	DI Leach	
MB 880-54056/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-54056/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-54056/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4708-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4708-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-4709-A-7-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4709-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 54097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4710-1	SS01	Soluble	Solid	300.0	54056
890-4710-2	SS02	Soluble	Solid	300.0	54056
890-4710-3	SS03	Soluble	Solid	300.0	54056
890-4710-4	SS04	Soluble	Solid	300.0	54056
890-4710-5	SS05	Soluble	Solid	300.0	54056
890-4710-6	SS06	Soluble	Solid	300.0	54056
890-4710-7	SS07	Soluble	Solid	300.0	54056
890-4710-8	SS08	Soluble	Solid	300.0	54056
MB 880-54056/1-A	Method Blank	Soluble	Solid	300.0	54056
LCS 880-54056/2-A	Lab Control Sample	Soluble	Solid	300.0	54056
LCSD 880-54056/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	54056
890-4708-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	54056
890-4708-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	54056
890-4709-A-7-B MS	Matrix Spike	Soluble	Solid	300.0	54056
890-4709-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	54056

Lab Chronicle

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS01

Date Collected: 05/22/23 11:30
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-1

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	54098	05/24/23 15:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54206	05/27/23 17:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54349	05/31/23 10:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			54164	05/25/23 11:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54080	05/24/23 12:56	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54026	05/25/23 00:52	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	54056	05/24/23 11:18	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	54097	05/25/23 15:11	CH	EET MID

Client Sample ID: SS02

Date Collected: 05/22/23 11:45
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-2

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			4.97 g	5 mL	54098	05/24/23 15:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54206	05/27/23 17:35	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54349	05/31/23 10:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			54164	05/25/23 11:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54080	05/24/23 12:56	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54026	05/25/23 01:14	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	54056	05/24/23 11:18	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	54097	05/25/23 15:17	CH	EET MID

Client Sample ID: SS03

Date Collected: 05/22/23 11:40
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-3

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			4.99 g	5 mL	54098	05/24/23 15:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54206	05/27/23 18:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54349	05/31/23 10:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			54164	05/25/23 11:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54080	05/24/23 12:56	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54026	05/25/23 01:35	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	54056	05/24/23 11:18	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	54097	05/25/23 15:49	CH	EET MID

Client Sample ID: SS04

Date Collected: 05/22/23 11:05
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-4

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			5.02 g	5 mL	54098	05/24/23 15:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54206	05/27/23 18:29	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54349	05/31/23 10:19	AJ	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS04

Date Collected: 05/22/23 11:05
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-4

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			54164	05/25/23 11:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	54080	05/24/23 12:56	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54026	05/25/23 01:56	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	54056	05/24/23 11:18	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	54097	05/25/23 15:55	CH	EET MID

Client Sample ID: SS05

Date Collected: 05/22/23 11:10
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-5

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			5.05 g	5 mL	54098	05/24/23 15:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54206	05/27/23 18:56	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54349	05/31/23 10:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			54164	05/25/23 11:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	54080	05/24/23 12:56	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54026	05/25/23 02:39	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	54056	05/24/23 11:18	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	54097	05/25/23 16:00	CH	EET MID

Client Sample ID: SS06

Date Collected: 05/22/23 11:15
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-6

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			5.03 g	5 mL	54098	05/24/23 15:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54206	05/27/23 19:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54349	05/31/23 10:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			54164	05/25/23 11:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54080	05/24/23 12:56	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54026	05/25/23 03:00	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	54056	05/24/23 11:18	KS	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	54097	05/25/23 16:06	CH	EET MID

Client Sample ID: SS07

Date Collected: 05/22/23 11:20
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-7

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			5.01 g	5 mL	54098	05/24/23 15:24	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54206	05/27/23 19:50	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54349	05/31/23 10:19	AJ	EET MID
Total/NA	Analysis	8015 NM		1			54164	05/25/23 11:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54080	05/24/23 12:56	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54026	05/25/23 03:21	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Client Sample ID: SS07
Date Collected: 05/22/23 11:20
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-7
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			4.98 g	50 mL	54056	05/24/23 11:18	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	54097	05/25/23 16:11	CH	EET MID

Client Sample ID: SS08
Date Collected: 05/22/23 11:25
Date Received: 05/23/23 08:34

Lab Sample ID: 890-4710-8
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			4.97 g	5 mL	54083	05/24/23 13:32	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54208	05/26/23 20:29	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			54349	05/30/23 09:08	AJ	EET MID
Total/NA	Analysis	8015 NM		1			54164	05/25/23 11:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54080	05/24/23 12:56	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	54026	05/25/23 06:35	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	54056	05/24/23 11:18	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	54097	05/25/23 16:16	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: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

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: Vast State 21H

Job ID: 890-4710-1
SDG: 03D2024189

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4710-1	SS01	Solid	05/22/23 11:30	05/23/23 08:34	0.5'
890-4710-2	SS02	Solid	05/22/23 11:45	05/23/23 08:34	0.5'
890-4710-3	SS03	Solid	05/22/23 11:40	05/23/23 08:34	0.5'
890-4710-4	SS04	Solid	05/22/23 11:05	05/23/23 08:34	0.5'
890-4710-5	SS05	Solid	05/22/23 11:10	05/23/23 08:34	0.5'
890-4710-6	SS06	Solid	05/22/23 11:15	05/23/23 08:34	0.5'
890-4710-7	SS07	Solid	05/22/23 11:20	05/23/23 08:34	0.5'
890-4710-8	SS08	Solid	05/22/23 11:25	05/23/23 08:34	0.5'

eurofins | Environment Testing Xenco

Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Hadlie Green	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum LLC	Company Name:	Ensolum LLC
Address:	3122 National Parks Hwy	Address:	
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	
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:	Vast State 21H	Turn Around	
Project Number:	03D2024189	☑ Routine ☐ Rush	
Project Location:	32.0368619, -103.5894039	Due Date:	5 Day
Sampler's Name:	Ronni Hayes	TAT starts the day received by the lab, if received by 4:30pm	
Cost Center #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	Thm-007	
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	

ANALYSIS REQUEST

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	CHLORIDES (EPA: 300.0)	BTEX	TPH	Sample Comments
SS01	S	5/22/2023	1130	0.5'	Grab	1		X	X	X	
SS02	S	5/22/2023	1145	0.5'	Grab	1		X	X	X	
SS03	S	5/22/2023	1140	0.5'	Grab	1		X	X	X	
SS04	S	5/22/2023	1105	0.5'	Grab	1		X	X	X	
SS05	S	5/22/2023	1110	0.5'	Grab	1		X	X	X	
SS06	S	5/22/2023	1115	0.5'	Grab	1		X	X	X	
SS07	S	5/22/2023	1120	0.5'	Grab	1		X	X	X	
~~SS08~~	~~S~~	~~5/22/2023~~	1125	0.5'	Grab	1		X	X	X	

890-4710 Chain of Custody

Parameters

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		5/23/22 8:15am	2		
3		5/23/23 0834			
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4710-1
SDG Number: 03D2024189

Login Number: 4710
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4710-1
SDG Number: 03D2024189

Login Number: 4710
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/24/23 10:58 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 6/19/2023 3:22:03 PM

JOB DESCRIPTION

Vast State 21H
SDG NUMBER 03D2024189

JOB NUMBER

890-4809-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

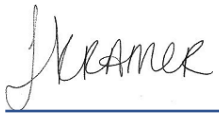
Eurofins Carlsbad

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



Generated
6/19/2023 3:22:03 PM

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

Client: Ensolum
Project/Site: Vast State 21H

Laboratory Job ID: 890-4809-1
SDG: 03D2024189

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4809-1
Project/Site: Vast State 21H SDG: 03D2024189

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
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: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Job ID: 890-4809-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4809-1

Receipt
The samples were received on 6/9/2023 3:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SS03A (890-4809-1), BH01A (890-4809-2), BH01D (890-4809-3), BH01E (890-4809-4), BH02A (890-4809-5), BH02D (890-4809-6), BH03A (890-4809-7) and BH03B (890-4809-8).

GC VOA
Method 8021B: The continuing calibration verification (CCV) associated with batch 880-55659 recovered below the lower control limit for Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-55659/64).

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-55616 and analytical batch 880-55659 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-55423 and analytical batch 880-55544 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 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS03A (890-4809-1) and (MB 880-55423/1-A). 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.

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: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: SS03A
Date Collected: 06/08/23 11:00
Date Received: 06/09/23 15:30
Sample Depth: 0.5

Lab Sample ID: 890-4809-1
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		06/15/23 13:52	06/17/23 15:37	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/15/23 13:52	06/17/23 15:37	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/15/23 13:52	06/17/23 15:37	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/15/23 13:52	06/17/23 15:37	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/15/23 13:52	06/17/23 15:37	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/15/23 13:52	06/17/23 15:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*06/15/23 13:52*	*06/17/23 15:37*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*06/15/23 13:52*	*06/17/23 15:37*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			06/19/23 15:39	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**27.9**		49.9		mg/Kg			06/16/23 15:39	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		06/13/23 13:17	06/16/23 02:44	1
Diesel Range Organics (Over C10-C28)	**27.9**		49.9		mg/Kg		06/13/23 13:17	06/16/23 02:44	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		06/13/23 13:17	06/16/23 02:44	1
Total TPH	**27.9**		49.9		mg/Kg		06/13/23 13:17	06/16/23 02:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*06/13/23 13:17*	*06/16/23 02:44*	*1*
1-Chlorooctane	*146*	*S1+*	*70 - 130*	*06/13/23 13:17*	*06/16/23 03:50*	*1*
o-Terphenyl	*100*		*70 - 130*	*06/13/23 13:17*	*06/16/23 02:44*	*1*
o-Terphenyl	*144*	*S1+*	*70 - 130*	*06/13/23 13:17*	*06/16/23 03:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**159**		4.95		mg/Kg			06/14/23 15:22	1

Client Sample ID: BH01A
Date Collected: 06/08/23 11:05
Date Received: 06/09/23 15:30
Sample Depth: 1

Lab Sample ID: 890-4809-2
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		06/15/23 13:52	06/17/23 15:58	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 15:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 15:58	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/15/23 13:52	06/17/23 15:58	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 15:58	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/15/23 13:52	06/17/23 15:58	1

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: BH01A

Date Collected: 06/08/23 11:05
Date Received: 06/09/23 15:30
Sample Depth: 1

Lab Sample ID: 890-4809-2

Matrix: Solid

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*06/15/23 13:52*	*06/17/23 15:58*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*06/15/23 13:52*	*06/17/23 15:58*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			06/19/23 15:39	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			06/16/23 15:39	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		06/13/23 13:17	06/16/23 04:12	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		06/13/23 13:17	06/16/23 04:12	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		06/13/23 13:17	06/16/23 04:12	1
Total TPH	<49.9	U	49.9	mg/Kg		06/13/23 13:17	06/16/23 04:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*121*		*70 - 130*	*06/13/23 13:17*	*06/16/23 04:12*	*1*
o-Terphenyl	*106*		*70 - 130*	*06/13/23 13:17*	*06/16/23 04:12*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3670**		24.9	mg/Kg			06/14/23 15:28	5

Client Sample ID: BH01D

Date Collected: 06/08/23 11:20
Date Received: 06/09/23 15:30
Sample Depth: 4

Lab Sample ID: 890-4809-3

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		06/15/23 13:52	06/17/23 17:50	1
Toluene	<0.00200	U	0.00200	mg/Kg		06/15/23 13:52	06/17/23 17:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		06/15/23 13:52	06/17/23 17:50	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		06/15/23 13:52	06/17/23 17:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		06/15/23 13:52	06/17/23 17:50	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		06/15/23 13:52	06/17/23 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*06/15/23 13:52*	*06/17/23 17:50*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*06/15/23 13:52*	*06/17/23 17:50*	*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			06/19/23 15:39	1

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: BH01D

Date Collected: 06/08/23 11:20
Date Received: 06/09/23 15:30
Sample Depth: 4

Lab Sample ID: 890-4809-3
Matrix: Solid

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			06/16/23 15:39	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		06/13/23 13:17	06/16/23 04:34	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		06/13/23 13:17	06/16/23 04:34	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		06/13/23 13:17	06/16/23 04:34	1
Total TPH	<49.8	U	49.8		mg/Kg		06/13/23 13:17	06/16/23 04:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*06/13/23 13:17*	*06/16/23 04:34*	*1*
o-Terphenyl	*100*		*70 - 130*	*06/13/23 13:17*	*06/16/23 04:34*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1240**		5.04		mg/Kg			06/14/23 15:34	1

Client Sample ID: BH01E

Date Collected: 06/09/23 12:00
Date Received: 06/09/23 15:30
Sample Depth: 5

Lab Sample ID: 890-4809-4
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		06/15/23 13:52	06/17/23 18:10	1
Toluene	<0.00198	U	0.00198		mg/Kg		06/15/23 13:52	06/17/23 18:10	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		06/15/23 13:52	06/17/23 18:10	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		06/15/23 13:52	06/17/23 18:10	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		06/15/23 13:52	06/17/23 18:10	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		06/15/23 13:52	06/17/23 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*06/15/23 13:52*	*06/17/23 18:10*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*06/15/23 13:52*	*06/17/23 18:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			06/19/23 15:39	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			06/16/23 15:39	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		06/13/23 13:17	06/16/23 04:56	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		06/13/23 13:17	06/16/23 04:56	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		06/13/23 13:17	06/16/23 04:56	1

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: BH01E

Lab Sample ID: 890-4809-4
Matrix: Solid
Date Collected: 06/09/23 12:00
Date Received: 06/09/23 15:30
Sample Depth: 5

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg		06/13/23 13:17	06/16/23 04:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*06/13/23 13:17*	*06/16/23 04:56*	*1*
o-Terphenyl	*103*		*70 - 130*	*06/13/23 13:17*	*06/16/23 04:56*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**404**		4.97		mg/Kg			06/14/23 15:39	1

Client Sample ID: BH02A

Lab Sample ID: 890-4809-5
Matrix: Solid
Date Collected: 06/08/23 12:20
Date Received: 06/09/23 15:30
Sample Depth: 1

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		06/15/23 13:52	06/17/23 18:31	1
Toluene	<0.00201	U	0.00201		mg/Kg		06/15/23 13:52	06/17/23 18:31	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		06/15/23 13:52	06/17/23 18:31	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		06/15/23 13:52	06/17/23 18:31	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		06/15/23 13:52	06/17/23 18:31	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		06/15/23 13:52	06/17/23 18:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*06/15/23 13:52*	*06/17/23 18:31*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*06/15/23 13:52*	*06/17/23 18:31*	*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			06/19/23 15:39	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**156**		50.0		mg/Kg			06/16/23 15:39	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		06/13/23 13:17	06/16/23 05:18	1
Diesel Range Organics (Over C10-C28)	**156**		50.0		mg/Kg		06/13/23 13:17	06/16/23 05:18	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/13/23 13:17	06/16/23 05:18	1
Total TPH	**156**		50.0		mg/Kg		06/13/23 13:17	06/16/23 05:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*121*		*70 - 130*	*06/13/23 13:17*	*06/16/23 05:18*	*1*
o-Terphenyl	*105*		*70 - 130*	*06/13/23 13:17*	*06/16/23 05:18*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: BH02A
Date Collected: 06/08/23 12:20
Date Received: 06/09/23 15:30
Sample Depth: 1

Lab Sample ID: 890-4809-5
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1560		25.0		mg/Kg			06/14/23 15:45	5

Client Sample ID: BH02D
Date Collected: 06/09/23 12:10
Date Received: 06/09/23 15:30
Sample Depth: 4

Lab Sample ID: 890-4809-6
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		06/15/23 13:52	06/17/23 18:51	1
Toluene	<0.00202	U	0.00202		mg/Kg		06/15/23 13:52	06/17/23 18:51	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		06/15/23 13:52	06/17/23 18:51	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		06/15/23 13:52	06/17/23 18:51	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		06/15/23 13:52	06/17/23 18:51	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		06/15/23 13:52	06/17/23 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*06/15/23 13:52*	*06/17/23 18:51*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*06/15/23 13:52*	*06/17/23 18:51*	*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			06/19/23 15:39	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			06/16/23 15:39	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		06/13/23 13:17	06/16/23 05:39	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		06/13/23 13:17	06/16/23 05:39	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		06/13/23 13:17	06/16/23 05:39	1
Total TPH	<49.9	U	49.9		mg/Kg		06/13/23 13:17	06/16/23 05:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*108*		*70 - 130*	*06/13/23 13:17*	*06/16/23 05:39*	*1*
o-Terphenyl	*91*		*70 - 130*	*06/13/23 13:17*	*06/16/23 05:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	246		5.00		mg/Kg			06/14/23 15:51	1

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: BH03A

Lab Sample ID: 890-4809-7
Matrix: Solid
Date Collected: 06/09/23 12:25
Date Received: 06/09/23 15:30
Sample Depth: 1

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		06/15/23 13:52	06/17/23 19:12	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/15/23 13:52	06/17/23 19:12	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/15/23 13:52	06/17/23 19:12	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/15/23 13:52	06/17/23 19:12	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/15/23 13:52	06/17/23 19:12	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/15/23 13:52	06/17/23 19:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*	*06/15/23 13:52*	*06/17/23 19:12*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*06/15/23 13:52*	*06/17/23 19:12*	*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			06/19/23 15:39	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			06/16/23 15:39	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		06/13/23 13:17	06/16/23 06:01	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		06/13/23 13:17	06/16/23 06:01	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/13/23 13:17	06/16/23 06:01	1
Total TPH	<50.0	U	50.0		mg/Kg		06/13/23 13:17	06/16/23 06:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*06/13/23 13:17*	*06/16/23 06:01*	*1*
o-Terphenyl	*100*		*70 - 130*	*06/13/23 13:17*	*06/16/23 06:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**551**		5.00		mg/Kg			06/14/23 16:07	1

Client Sample ID: BH03B

Lab Sample ID: 890-4809-8
Matrix: Solid
Date Collected: 06/09/23 12:30
Date Received: 06/09/23 15:30
Sample Depth: 2

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		06/15/23 13:52	06/17/23 19:33	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 19:33	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 19:33	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/15/23 13:52	06/17/23 19:33	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 19:33	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/15/23 13:52	06/17/23 19:33	1

Client Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: BH03B

Date Collected: 06/09/23 12:30
Date Received: 06/09/23 15:30
Sample Depth: 2

Lab Sample ID: 890-4809-8

Matrix: Solid

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*06/15/23 13:52*	*06/17/23 19:33*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*06/15/23 13:52*	*06/17/23 19:33*	*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			06/19/23 15:39	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			06/16/23 15:39	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		06/13/23 13:17	06/16/23 06:23	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		06/13/23 13:17	06/16/23 06:23	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		06/13/23 13:17	06/16/23 06:23	1
Total TPH	<50.0	U	50.0	mg/Kg		06/13/23 13:17	06/16/23 06:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*120*		*70 - 130*	*06/13/23 13:17*	*06/16/23 06:23*	*1*
o-Terphenyl	*107*		*70 - 130*	*06/13/23 13:17*	*06/16/23 06:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**250**		4.95	mg/Kg			06/14/23 16:13	1

Surrogate Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

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)
890-4806-A-1-C MS	Matrix Spike	101	99
890-4806-A-1-D MSD	Matrix Spike Duplicate	105	104
890-4809-1	SS03A	97	99
890-4809-2	BH01A	103	103
890-4809-3	BH01D	84	103
890-4809-4	BH01E	87	102
890-4809-5	BH02A	91	103
890-4809-6	BH02D	87	102
890-4809-7	BH03A	86	99
890-4809-8	BH03B	91	106
LCS 880-55616/1-A	Lab Control Sample	106	98
LCSD 880-55616/2-A	Lab Control Sample Dup	99	98
MB 880-55611/5-A	Method Blank	89	121
MB 880-55616/5-A	Method Blank	84	118

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)
890-4809-1	SS03A	112	100
890-4809-1	SS03A	146 S1+	144 S1+
890-4809-1 MS	SS03A	118	98
890-4809-1 MSD	SS03A	115	95
890-4809-2	BH01A	121	106
890-4809-3	BH01D	110	100
890-4809-4	BH01E	116	103
890-4809-5	BH02A	121	105
890-4809-6	BH02D	108	91
890-4809-7	BH03A	118	100
890-4809-8	BH03B	120	107
LCS 880-55423/2-A	Lab Control Sample	106	93
LCSD 880-55423/3-A	Lab Control Sample Dup	102	85
MB 880-55423/1-A	Method Blank	0.03 S1-	0.02 S1-

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-55611/5-A
Matrix: Solid
Analysis Batch: 55659

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 55611

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:27	06/17/23 00:44	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:27	06/17/23 00:44	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:27	06/17/23 00:44	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/15/23 13:27	06/17/23 00:44	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:27	06/17/23 00:44	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/15/23 13:27	06/17/23 00:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*	*06/15/23 13:27*	*06/17/23 00:44*	*1*
1,4-Difluorobenzene (Surr)	*121*		*70 - 130*	*06/15/23 13:27*	*06/17/23 00:44*	*1*

Lab Sample ID: MB 880-55616/5-A
Matrix: Solid
Analysis Batch: 55659

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 55616

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 12:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 12:23	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 12:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/15/23 13:52	06/17/23 12:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/15/23 13:52	06/17/23 12:23	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/15/23 13:52	06/17/23 12:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*06/15/23 13:52*	*06/17/23 12:23*	*1*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*	*06/15/23 13:52*	*06/17/23 12:23*	*1*

Lab Sample ID: LCS 880-55616/1-A
Matrix: Solid
Analysis Batch: 55659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 55616

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1053		mg/Kg		105	70 - 130		
Toluene			0.100	0.1004		mg/Kg		100	70 - 130		
Ethylbenzene			0.100	0.08314		mg/Kg		83	70 - 130		
m-Xylene & p-Xylene			0.200	0.1692		mg/Kg		85	70 - 130		
o-Xylene			0.100	0.08598		mg/Kg		86	70 - 130		

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

Lab Sample ID: LCSD 880-55616/2-A
Matrix: Solid
Analysis Batch: 55659

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 55616

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1164		mg/Kg		116	70 - 130	10	35

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

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

Lab Sample ID: LCSD 880-55616/2-A
Matrix: Solid
Analysis Batch: 55659

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 55616

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1102		mg/Kg		110	70 - 130	9	35
Ethylbenzene			0.100	0.08964		mg/Kg		90	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1813		mg/Kg		91	70 - 130	7	35
o-Xylene			0.100	0.09179		mg/Kg		92	70 - 130	7	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 890-4806-A-1-C MS
Matrix: Solid
Analysis Batch: 55659

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 55616

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.09362		mg/Kg		93	70 - 130
Toluene	<0.00199	U F1	0.101	0.08002		mg/Kg		79	70 - 130
Ethylbenzene	<0.00199	U F1	0.101	0.06203	F1	mg/Kg		62	70 - 130
m-Xylene & p-Xylene	<0.00398	U F1	0.202	0.1311	F1	mg/Kg		65	70 - 130
o-Xylene	<0.00199	U F1	0.101	0.06901	F1	mg/Kg		68	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 890-4806-A-1-D MSD
Matrix: Solid
Analysis Batch: 55659

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 55616

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.07660		mg/Kg		77	70 - 130	20	35
Toluene	<0.00199	U F1	0.0996	0.06322	F1	mg/Kg		63	70 - 130	23	35
Ethylbenzene	<0.00199	U F1	0.0996	0.04535	F1	mg/Kg		46	70 - 130	31	35
m-Xylene & p-Xylene	<0.00398	U F1	0.199	0.1022	F1	mg/Kg		51	70 - 130	25	35
o-Xylene	<0.00199	U F1	0.0996	0.06206	F1	mg/Kg		62	70 - 130	11	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

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

Lab Sample ID: MB 880-55423/1-A
Matrix: Solid
Analysis Batch: 55544

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 55423

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		06/13/23 13:17	06/16/23 00:51	1

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

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

Lab Sample ID: MB 880-55423/1-A
Matrix: Solid
Analysis Batch: 55544

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 55423

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		06/13/23 13:17	06/16/23 00:51	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/13/23 13:17	06/16/23 00:51	1
Total TPH	<50.0	U	50.0		mg/Kg		06/13/23 13:17	06/16/23 00:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*0.03*	*S1-*	*70 - 130*	*06/13/23 13:17*	*06/16/23 00:51*	*1*
o-Terphenyl	*0.02*	*S1-*	*70 - 130*	*06/13/23 13:17*	*06/16/23 00:51*	*1*

Lab Sample ID: LCS 880-55423/2-A
Matrix: Solid
Analysis Batch: 55544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 55423

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1029		mg/Kg		103	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	762.4		mg/Kg		76	70 - 130		

Surrogate			*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane			*106*		*70 - 130*
o-Terphenyl			*93*		*70 - 130*

Lab Sample ID: LCSD 880-55423/3-A
Matrix: Solid
Analysis Batch: 55544

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 55423

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1035		mg/Kg		103	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	723.0		mg/Kg		72	70 - 130	5	20

Surrogate			*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane			*102*		*70 - 130*
o-Terphenyl			*85*		*70 - 130*

Lab Sample ID: 890-4809-1 MS
Matrix: Solid
Analysis Batch: 55544

Client Sample ID: SS03A
Prep Type: Total/NA
Prep Batch: 55423

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	1057		mg/Kg		103	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	721.6		mg/Kg		72	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*118*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

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

Lab Sample ID: 890-4809-1 MS
Matrix: Solid
Analysis Batch: 55544

Client Sample ID: SS03A
Prep Type: Total/NA
Prep Batch: 55423

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: 890-4809-1 MSD
Matrix: Solid
Analysis Batch: 55544

Client Sample ID: SS03A
Prep Type: Total/NA
Prep Batch: 55423

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	1243		mg/Kg		122	70 - 130	16	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	997	692.5	F1	mg/Kg		69	70 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*115*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-55384/1-A
Matrix: Solid
Analysis Batch: 55505

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			06/14/23 10:57	1

Lab Sample ID: LCS 880-55384/2-A
Matrix: Solid
Analysis Batch: 55505

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	248.8		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-55384/3-A
Matrix: Solid
Analysis Batch: 55505

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	249.4		mg/Kg		100	90 - 110	0	20

Lab Sample ID: 890-4809-6 MS
Matrix: Solid
Analysis Batch: 55505

Client Sample ID: BH02D
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	246		250	489.1		mg/Kg		97	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-4809-6 MSD
Matrix: Solid
Analysis Batch: 55505

Client Sample ID: BH02D
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	246		250	490.1		mg/Kg		97	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

GC VOA

Prep Batch: 55611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-55611/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 55616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-1	SS03A	Total/NA	Solid	5035	
890-4809-2	BH01A	Total/NA	Solid	5035	
890-4809-3	BH01D	Total/NA	Solid	5035	
890-4809-4	BH01E	Total/NA	Solid	5035	
890-4809-5	BH02A	Total/NA	Solid	5035	
890-4809-6	BH02D	Total/NA	Solid	5035	
890-4809-7	BH03A	Total/NA	Solid	5035	
890-4809-8	BH03B	Total/NA	Solid	5035	
MB 880-55616/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-55616/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-55616/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4806-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-4806-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 55659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-1	SS03A	Total/NA	Solid	8021B	55616
890-4809-2	BH01A	Total/NA	Solid	8021B	55616
890-4809-3	BH01D	Total/NA	Solid	8021B	55616
890-4809-4	BH01E	Total/NA	Solid	8021B	55616
890-4809-5	BH02A	Total/NA	Solid	8021B	55616
890-4809-6	BH02D	Total/NA	Solid	8021B	55616
890-4809-7	BH03A	Total/NA	Solid	8021B	55616
890-4809-8	BH03B	Total/NA	Solid	8021B	55616
MB 880-55611/5-A	Method Blank	Total/NA	Solid	8021B	55611
MB 880-55616/5-A	Method Blank	Total/NA	Solid	8021B	55616
LCS 880-55616/1-A	Lab Control Sample	Total/NA	Solid	8021B	55616
LCSD 880-55616/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	55616
890-4806-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	55616
890-4806-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	55616

Analysis Batch: 55855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-1	SS03A	Total/NA	Solid	Total BTEX	
890-4809-2	BH01A	Total/NA	Solid	Total BTEX	
890-4809-3	BH01D	Total/NA	Solid	Total BTEX	
890-4809-4	BH01E	Total/NA	Solid	Total BTEX	
890-4809-5	BH02A	Total/NA	Solid	Total BTEX	
890-4809-6	BH02D	Total/NA	Solid	Total BTEX	
890-4809-7	BH03A	Total/NA	Solid	Total BTEX	
890-4809-8	BH03B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 55423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-1	SS03A	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

GC Semi VOA (Continued)

Prep Batch: 55423 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-2	BH01A	Total/NA	Solid	8015NM Prep	
890-4809-3	BH01D	Total/NA	Solid	8015NM Prep	
890-4809-4	BH01E	Total/NA	Solid	8015NM Prep	
890-4809-5	BH02A	Total/NA	Solid	8015NM Prep	
890-4809-6	BH02D	Total/NA	Solid	8015NM Prep	
890-4809-7	BH03A	Total/NA	Solid	8015NM Prep	
890-4809-8	BH03B	Total/NA	Solid	8015NM Prep	
MB 880-55423/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-55423/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-55423/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4809-1 MS	SS03A	Total/NA	Solid	8015NM Prep	
890-4809-1 MSD	SS03A	Total/NA	Solid	8015NM Prep	

Analysis Batch: 55544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-1	SS03A	Total/NA	Solid	8015B NM	55423
890-4809-1	SS03A	Total/NA	Solid	8015B NM	55423
890-4809-2	BH01A	Total/NA	Solid	8015B NM	55423
890-4809-3	BH01D	Total/NA	Solid	8015B NM	55423
890-4809-4	BH01E	Total/NA	Solid	8015B NM	55423
890-4809-5	BH02A	Total/NA	Solid	8015B NM	55423
890-4809-6	BH02D	Total/NA	Solid	8015B NM	55423
890-4809-7	BH03A	Total/NA	Solid	8015B NM	55423
890-4809-8	BH03B	Total/NA	Solid	8015B NM	55423
MB 880-55423/1-A	Method Blank	Total/NA	Solid	8015B NM	55423
LCS 880-55423/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	55423
LCSD 880-55423/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	55423
890-4809-1 MS	SS03A	Total/NA	Solid	8015B NM	55423
890-4809-1 MSD	SS03A	Total/NA	Solid	8015B NM	55423

Analysis Batch: 55707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-1	SS03A	Total/NA	Solid	8015 NM	
890-4809-2	BH01A	Total/NA	Solid	8015 NM	
890-4809-3	BH01D	Total/NA	Solid	8015 NM	
890-4809-4	BH01E	Total/NA	Solid	8015 NM	
890-4809-5	BH02A	Total/NA	Solid	8015 NM	
890-4809-6	BH02D	Total/NA	Solid	8015 NM	
890-4809-7	BH03A	Total/NA	Solid	8015 NM	
890-4809-8	BH03B	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 55384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-1	SS03A	Soluble	Solid	DI Leach	
890-4809-2	BH01A	Soluble	Solid	DI Leach	
890-4809-3	BH01D	Soluble	Solid	DI Leach	
890-4809-4	BH01E	Soluble	Solid	DI Leach	
890-4809-5	BH02A	Soluble	Solid	DI Leach	
890-4809-6	BH02D	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

HPLC/IC (Continued)

Leach Batch: 55384 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-7	BH03A	Soluble	Solid	DI Leach	
890-4809-8	BH03B	Soluble	Solid	DI Leach	
MB 880-55384/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-55384/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-55384/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4809-6 MS	BH02D	Soluble	Solid	DI Leach	
890-4809-6 MSD	BH02D	Soluble	Solid	DI Leach	

Analysis Batch: 55505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4809-1	SS03A	Soluble	Solid	300.0	55384
890-4809-2	BH01A	Soluble	Solid	300.0	55384
890-4809-3	BH01D	Soluble	Solid	300.0	55384
890-4809-4	BH01E	Soluble	Solid	300.0	55384
890-4809-5	BH02A	Soluble	Solid	300.0	55384
890-4809-6	BH02D	Soluble	Solid	300.0	55384
890-4809-7	BH03A	Soluble	Solid	300.0	55384
890-4809-8	BH03B	Soluble	Solid	300.0	55384
MB 880-55384/1-A	Method Blank	Soluble	Solid	300.0	55384
LCS 880-55384/2-A	Lab Control Sample	Soluble	Solid	300.0	55384
LCSD 880-55384/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	55384
890-4809-6 MS	BH02D	Soluble	Solid	300.0	55384
890-4809-6 MSD	BH02D	Soluble	Solid	300.0	55384

Lab Chronicle

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: SS03A
Date Collected: 06/08/23 11:00
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-1
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	55616	06/15/23 13:52	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55659	06/17/23 15:37	SM	EET MID
Total/NA	Analysis	Total BTEX		1			55855	06/19/23 15:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			55707	06/16/23 15:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 02:44	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 03:50	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	55384	06/13/23 10:11	KS	EET MID
Soluble	Analysis	300.0		1			55505	06/14/23 15:22	CH	EET MID

Client Sample ID: BH01A
Date Collected: 06/08/23 11:05
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-2
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			5.00 g	5 mL	55616	06/15/23 13:52	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55659	06/17/23 15:58	SM	EET MID
Total/NA	Analysis	Total BTEX		1			55855	06/19/23 15:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			55707	06/16/23 15:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 04:12	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	55384	06/13/23 10:11	KS	EET MID
Soluble	Analysis	300.0		5			55505	06/14/23 15:28	CH	EET MID

Client Sample ID: BH01D
Date Collected: 06/08/23 11:20
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-3
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			5.01 g	5 mL	55616	06/15/23 13:52	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55659	06/17/23 17:50	SM	EET MID
Total/NA	Analysis	Total BTEX		1			55855	06/19/23 15:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			55707	06/16/23 15:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 04:34	AJ	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	55384	06/13/23 10:11	KS	EET MID
Soluble	Analysis	300.0		1			55505	06/14/23 15:34	CH	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: BH01E

Date Collected: 06/09/23 12:00
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-4
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			5.04 g	5 mL	55616	06/15/23 13:52	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55659	06/17/23 18:10	SM	EET MID
Total/NA	Analysis	Total BTEX		1			55855	06/19/23 15:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			55707	06/16/23 15:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 04:56	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	55384	06/13/23 10:11	KS	EET MID
Soluble	Analysis	300.0		1			55505	06/14/23 15:39	CH	EET MID

Client Sample ID: BH02A

Date Collected: 06/08/23 12:20
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-5
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			4.98 g	5 mL	55616	06/15/23 13:52	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55659	06/17/23 18:31	SM	EET MID
Total/NA	Analysis	Total BTEX		1			55855	06/19/23 15:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			55707	06/16/23 15:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 05:18	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	55384	06/13/23 10:11	KS	EET MID
Soluble	Analysis	300.0		5			55505	06/14/23 15:45	CH	EET MID

Client Sample ID: BH02D

Date Collected: 06/09/23 12:10
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-6
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			4.95 g	5 mL	55616	06/15/23 13:52	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55659	06/17/23 18:51	SM	EET MID
Total/NA	Analysis	Total BTEX		1			55855	06/19/23 15:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			55707	06/16/23 15:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 05:39	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	55384	06/13/23 10:11	KS	EET MID
Soluble	Analysis	300.0		1			55505	06/14/23 15:51	CH	EET MID

Client Sample ID: BH03A

Date Collected: 06/09/23 12:25
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-7
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			5.02 g	5 mL	55616	06/15/23 13:52	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55659	06/17/23 19:12	SM	EET MID
Total/NA	Analysis	Total BTEX		1			55855	06/19/23 15:39	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Client Sample ID: BH03A
Date Collected: 06/09/23 12:25
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			55707	06/16/23 15:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 06:01	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	55384	06/13/23 10:11	KS	EET MID
Soluble	Analysis	300.0		1			55505	06/14/23 16:07	CH	EET MID

Client Sample ID: BH03B
Date Collected: 06/09/23 12:30
Date Received: 06/09/23 15:30

Lab Sample ID: 890-4809-8
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			5.00 g	5 mL	55616	06/15/23 13:52	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55659	06/17/23 19:33	SM	EET MID
Total/NA	Analysis	Total BTEX		1			55855	06/19/23 15:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			55707	06/16/23 15:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	55423	06/13/23 13:17	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55544	06/16/23 06:23	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	55384	06/13/23 10:11	KS	EET MID
Soluble	Analysis	300.0		1			55505	06/14/23 16:13	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: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

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: Vast State 21H

Job ID: 890-4809-1
SDG: 03D2024189

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4809-1	SS03A	Solid	06/08/23 11:00	06/09/23 15:30	0.5
890-4809-2	BH01A	Solid	06/08/23 11:05	06/09/23 15:30	1
890-4809-3	BH01D	Solid	06/08/23 11:20	06/09/23 15:30	4
890-4809-4	BH01E	Solid	06/09/23 12:00	06/09/23 15:30	5
890-4809-5	BH02A	Solid	06/08/23 12:20	06/09/23 15:30	1
890-4809-6	BH02D	Solid	06/09/23 12:10	06/09/23 15:30	4
890-4809-7	BH03A	Solid	06/09/23 12:25	06/09/23 15:30	1
890-4809-8	BH03B	Solid	06/09/23 12:30	06/09/23 15:30	2

eurofins | Environment Testing Xenco

Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Hadlie Green	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marienfeld St Suite 400	Address:	601 N Marienfeld St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:	432-557-8895	Email:	hgreen@ensolum.com, kjennings@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:	Vast State 21H	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2024189	Due Date:	
Project Location:	32.0367, -103[illegible].5889	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:	TWN09	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.0	
Total Containers:		Corrected Temperature:	0.8	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS03A	Soil	6/8/2023	1100	0.5'	Comp	1		x	x	x
BH01A	Soil	6/8/2023	1105	1'	Comp	1		x	x	x
BH01D	Soil	6/8/2023	1120	4'	Comp	1		x	x	x
BH01E	Soil	6/9/2023	1200	5'	Comp	1		x	x	x
BH02A	Soil	6/8/2023	1220	1'	Comp	1		x	x	x
BH02D	Soil	6/9/2023	1210	4'	Comp	1		x	x	x
BH03A	Soil	6/9/2023	1225	1'	Comp	1		x	x	x
BH03B	Soil	6/9/2023	1230	2'	Comp	1		x	x	x

ANALYSIS REQUEST

Parameters

890-4809 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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Peter Van Patten	Clae Cat	6.9.23 1530			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4809-1
SDG Number: 03D2024189

Login Number: 4809
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: 890-4809-1
SDG Number: 03D2024189

Login Number: 4809
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 06/13/23 10:37 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

Hadlie Green

From: Buchanan, Michael, EMNRD <Michael.Buchanan@emnrd.nm.gov>
Sent: Friday, June 2, 2023 4:54 PM
To: Hadlie Green; Enviro, OCD, EMNRD
Cc: Kalei Jennings; Peter Van Patten
Subject: RE: [EXTERNAL] COP - Sampling Notification (Week of 6/5/2023)

[**EXTERNAL EMAIL**]

Received.

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Mike Buchanan ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE | Albuquerque, NM 87113
| michael.buchanan@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Hadlie Green <hgreen@ensolum.com>
Sent: Friday, June 2, 2023 9:18 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Kalei Jennings <kjennings@ensolum.com>; Peter Van Patten <pvanpatten@ensolum.com>
Subject: [EXTERNAL] COP - Sampling Notification (Week of 6/5/2023)

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 June 5, 2023.

- Vast State 21H / NAPP2313140440
  - Sampling Date: 6/9/2023 @ 10:00 AM MST
- Stratojet 31 State Com 8H / NAPP2314235805
  - Sampling Date: 6/8/2023 @ 10:00 AM 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	NAPP2313140440
District RP	
Facility ID	fAPP2202347033
Application ID	

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	217817
Contact Name	Jacob Laird	Contact Telephone	(575) 703-5482
Contact email	Jacob.Laird@ConocoPhillips.com	Incident # *(assigned by OCD)*	NAPP2313140440
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.0367 Longitude -103.5889

(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Vast State 021H	Site Type	Tank Battery
Date Release Discovered	May 6, 2023	API# *(if applicable)*	30-025-43550

Unit Letter	Section	Township	Range	County
P	17	26S	33E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls) 1.34	Volume Recovered (bbls) 1
☒ Produced Water	Volume Released (bbls) 4.03	Volume Recovered (bbls) 1
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a pin hole in back pressure due to corrosion.
The release was on the pad.
Evaluation will be made of the site to determine if we may commence remediation immediately or delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2313140440
District RP	
Facility ID	fAPP2202347033
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: Brittany N. Esparza Title: Environmental Technician

Signature: Brittany Esparza Date: 5/11/2023

email: Brittany.Esparza@ConocoPhillips.com Telephone: (432) 221-0398

OCD Only

Received by: Jocelyn Harimon Date: 05/11/2023

NAPP2313140440

Convert irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Average Depth (in.)	Estimated *Pool* Area (sq. ft.)	Estimated volume of each pool area (bbl.)	Penetration allowance (ft.)	Total Estimated Volume of Spill (bbl.)	Percentage of Oil if Spilled Fluid is a Mixture (%.)	Total Estimated Volume of Spilled Oil (bbl.)	Total Estimated Volume of Spilled Liquid other than Oil (bbl.)
Rectangle A	43.00	21.00	0.40	903.00	5.36	0.00	5.37	25%	1.34	4.03
Rectangle B				0.00	0.00	0.00	0.00		0.00	0.00
Rectangle C				0.00	0.00	0.00	0.00		0.00	0.00
Rectangle D				0.00	0.00	0.00	0.00		0.00	0.00
Rectangle E				0.00	0.00	0.00	0.00		0.00	0.00
Rectangle F				0.00	0.00	0.00	0.00		0.00	0.00
Rectangle G				0.00	0.00	0.00	0.00		0.00	0.00
Rectangle H				0.00	0.00	0.00	0.00		0.00	0.00
Rectangle I				0.00	0.00	0.00	0.00		0.00	0.00
Rectangle J				0.00	0.00	0.00	0.00		0.00	0.00
Total Surface Pool Volume Released, Release to Soil/Caliche:							5.37		1.34	4.03

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 215966
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	5/11/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2313140440
District RP	
Facility ID	fAPP22023447033
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?	>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	NAPP2313140440
District RP	
Facility ID	fAPP2202347033
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: __Jacob Laird_____ Title: __Environmental Engineer_____

Signature: Jacob Laird Date: _____7/27/2023_____

email: __Jacob.Laird@conocophillips.com_____ Telephone: ___575-703-5482_____

OCD Only

Received by: Shelly Wells Date: 7/31/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2313140440
District RP	
Facility ID	fAPP2202347033
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

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: Jacob Laird Title: Environmental Engineer

Signature: Jacob Laird Date: 7/27/2023

email: Jacob.Laird@conocophillips.com Telephone: 575-703-5482

OCD Only

Received by: Shelly Wells Date: 7/31/2023

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Nelson Velez Date: 10/24/2023

Remediation plan is approved under the following conditions; 1. COG must provide supporting documentation toward the site assessment/characterization report and submit within its final closure report. 2. All other proposals approved as written. 3. Remediation Due date updated to January 22, 2024 (90-days) and to submit its appropriate or final closure report.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 245965

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 245965
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Remediation plan is approved under the following conditions; 1. COG must provide supporting documentation toward the site assessment/characterization report and submit within its final closure report. 2. All other proposals approved as written. 3. Remediation Due date updated to January 22, 2024 (90-days) and to submit its appropriate or final closure report.	10/24/2023