ENSOLUM

June 12, 2023

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

Re: Closure Request
Red Raider BKS State 001
Incident Number NAPP2313136415
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of COG Operating, LLC (COG), has prepared this *Closure Request* to document assessment and soil sampling activities performed at the Red Raider BKS State 001 (Site). The purpose of the Site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following an oil dump failure resulting in a flare fire at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, COG is submitting this *Closure Request,* requesting closure for Incident Number NAPP2313136415.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit J, Section 25, Township 24 South, Range 33 East, in Lea County, New Mexico (32.1865°, -103.5246°) and is associated with oil and gas exploration and production operations on New Mexico State Land.

On May 2, 2023, an oil dump malfunction caused approximately 0.1009 barrels (bbls) of crude oil to be sent to the flare. The crude oil ignited and extinguished itself after reaching the ground. COG reported the release immediately to the New Mexico Oil Conservation Division (NMOCD) via email on May 2, 2023, and submitted a Release Notification Form C-141 (Form C-141) on May 11, 2023. The release was assigned Incident Number NAPP2313136415.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is estimated to be between 51 and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) C-03602, located approximately 0.2 miles northwest of the Site. The groundwater well was drilled during January 2013 to a total depth of 75 feet bgs, and no groundwater was encountered. All wells used for depth to groundwater determination are presented on Figure 1. The associated well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a riverine, located approximately 777 feet southwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

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

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

SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On May 18, 2023, Ensolum personnel were at the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. The stained soil from the fire had been scraped up prior to Ensolum personnel visiting the Site. Three assessment soil samples (SS01 through SS03) were collected within the release area at an approximate depth of 0.25 feet bgs to assess for the presence or absence of impacted soil resulting from the crude oil flare fire. Four assessment soil samples (SS04 through SS07) were collected around the release area at a depth of 0.25 feet bgs to confirm the lateral extent of the release. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Photographic documentation was completed during the Site visit and a photographic log is included as Appendix B.

On May 31, 2023, Ensolum personnel returned to the Site to complete additional assessment activities to further confirm the absence of impacted soil. Three boreholes were advanced via hand auger at the locations of initial assessment samples SS01 through SS03. Soil from the boreholes was field screened for VOCs and chloride. Field screening results and observations for the boreholes were logged on lithologic soil sampling logs, which are included in Appendix C. One discrete soil sample was collected from each borehole (SS01A through SS03A) at a depth ranging from 1-foot to 3 feet bgs. The soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

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

Laboratory analytical results for soil samples SS01/SS01A, SS02/SS02A, SS03/SS03A, and SS04 through SS07 indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

CLOSURE REQUEST

Site assessment and soil sampling activities were conducted at the Site to assess for the presence or absence of impacted soil resulting from the May 2, 2023, crude oil flare fire. Laboratory analytical results for the soil samples indicated all COC concentrations were compliant with most stringent Table I Closure Criteria. Based on the laboratory analytical results, no impacted soil was identified, and no further remediation is required.

Depth to groundwater has been estimated to be between 51 and 100 feet bgs and no other sensitive receptors were identified near the release extent. COG believes the remedial actions completed are protective of human health, the environment, and groundwater. As such, COG respectfully requests closure for Incident Number NAPP2313136415. The NMOCD notifications are included in Appendix E and the Form C-141 is included in Appendix F.

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

Sincerely,
Ensolum, LLC

Ronni Hayes
Assistant Geologist

Aimee Cole
Senior Managing Scientist

cc: Jacob Laird, COG Operating, LLC
New Mexico State Land Office

Appendices:

Figure 1	Site Receptor Map
Figure 2	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

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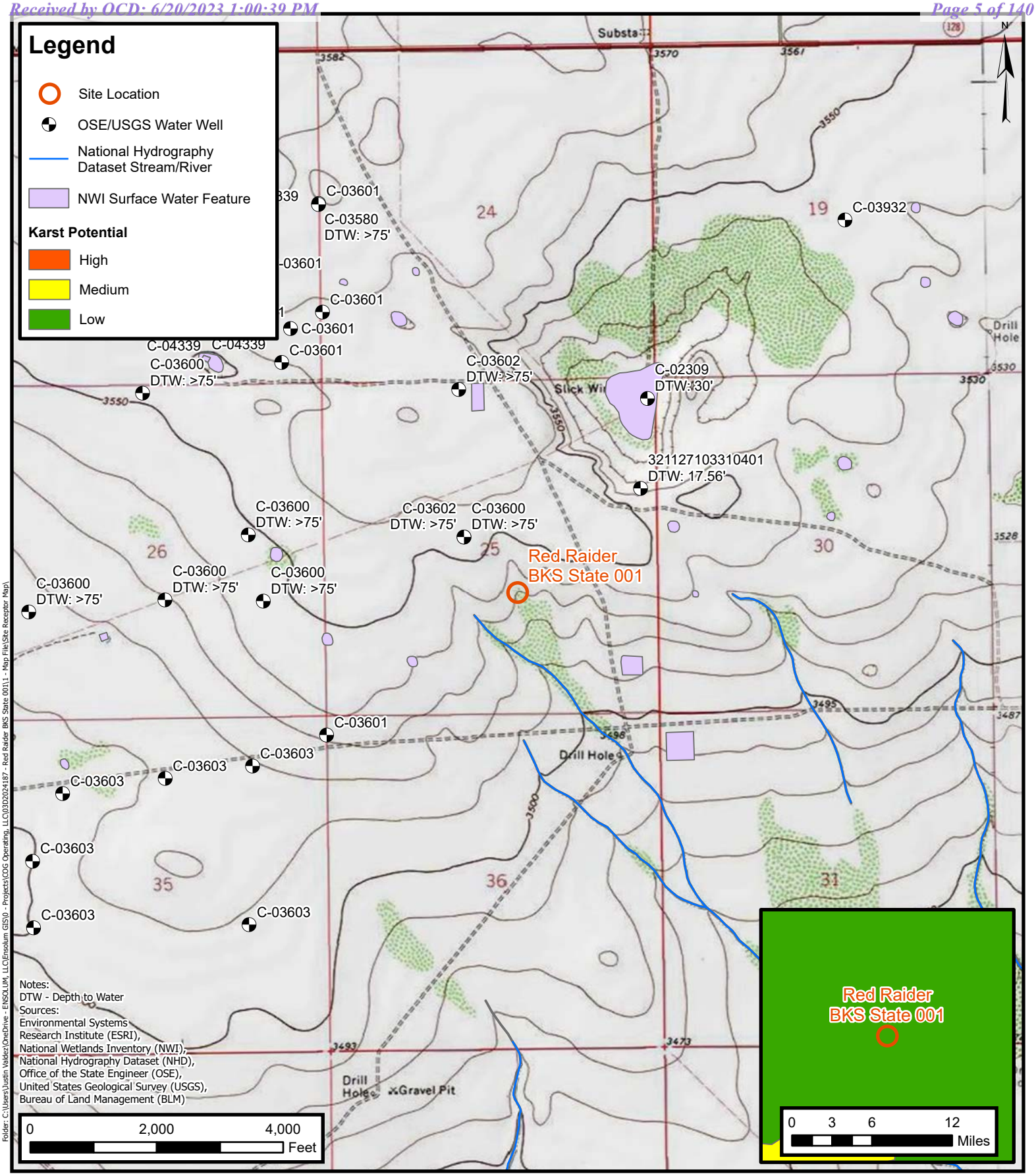
FIGURES



Folder: C:\Users\Justin Valdez\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\COG Operating, LLC\03202024187 - Red Raider BKS State 001\1 - Map File\Site Receptor Map\

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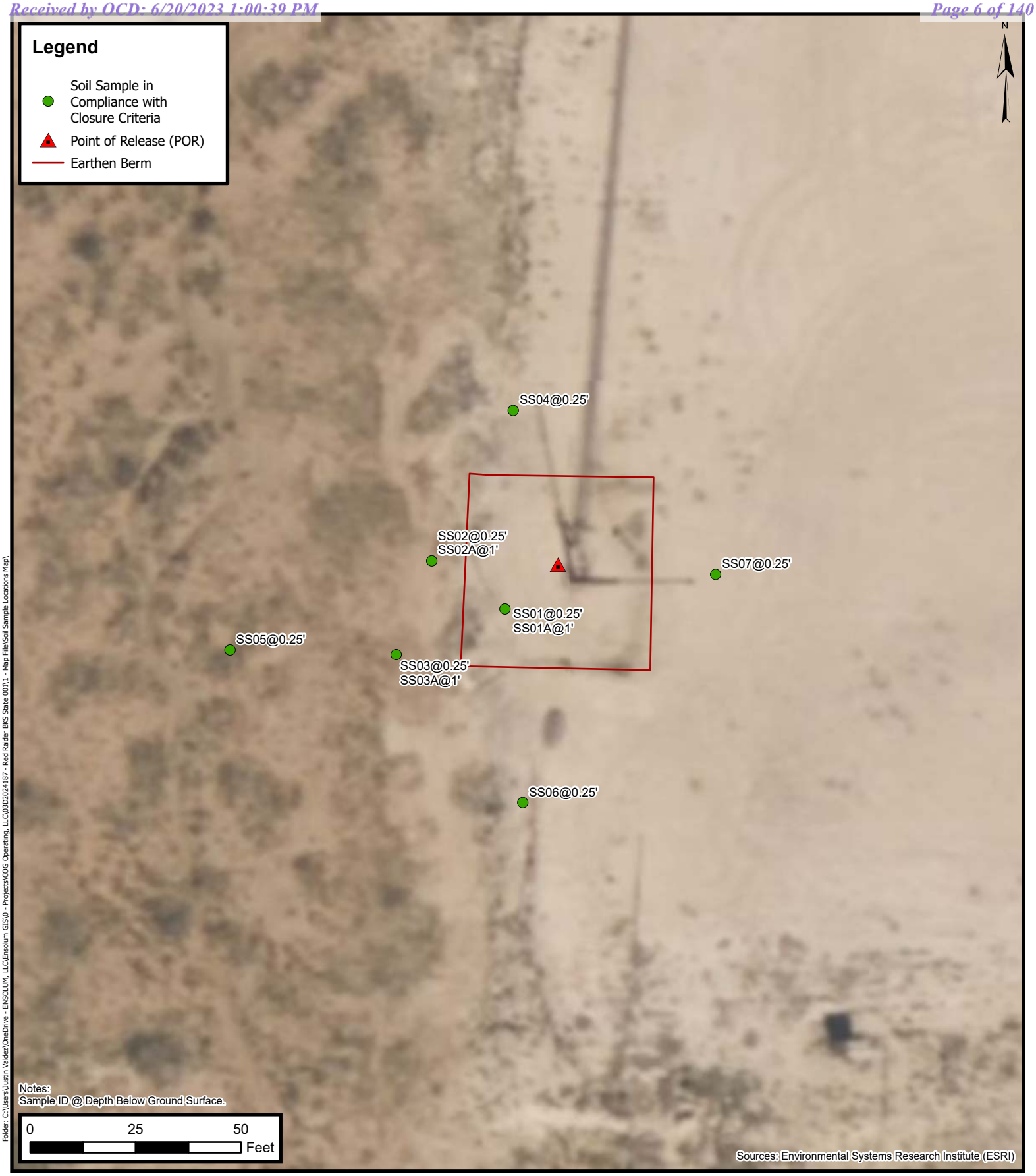
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

COG Operating, LLC
Red Raider BKS State 001
Incident Number: NAPP2313136415
Unit J, Sec 25, T24S, R33E
Lea County, New Mexico

FIGURE 1



Folder: C:\Users\Justin Valdez\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\COG Operating, LLC\03202024187 - Red Raider BKS State 001\1 - Map File\Soil Sample Locations Map\

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Environmental, Engineering and Hydrogeologic Consultants

Soil Sample Locations

COG Operating, LLC
Red Raider BKS State 001
Incident Number: NAPP2313136415
Unit J, Sec 25, T24S, R33E
Lea County, New Mexico

FIGURE 2

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Red Raider BKS State 001
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**	**10,000**
Assessment Soil Samples										
SS01	05/18/2023	0.25	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	106
SS01A	05/31/2023	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	336
SS02	05/18/2023	0.25	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	101
SS02A	05/31/2023	1	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	<49.8	206
SS03	05/18/2023	0.25	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	101
SS03A	05/31/2023	3	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	388
SS04	05/18/2023	0.25	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	71.7
SS05	05/18/2023	0.25	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	51.8
SS06	05/18/2023	0.25	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	64.4
SS07	05/18/2023	0.25	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	41.7

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

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APPENDIX A

Referenced Well Records

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

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 the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

site_no list =

- 321127103310401

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

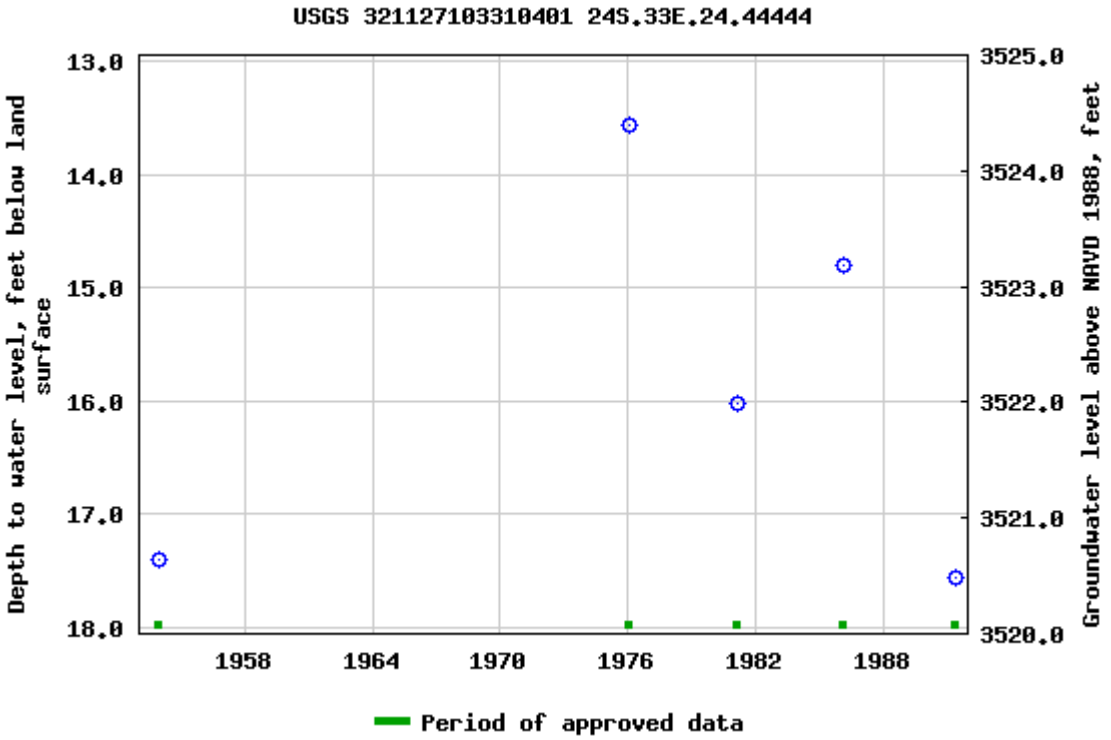
USGS 321127103310401 24S.33E.24.44444

Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°11'27", Longitude 103°31'04" NAD27
Land-surface elevation 3,538 feet above NAVD88
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

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



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2023-05-17 16:59:35 EDT
0.71 0.52 nadww01

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
BH 18	C3682; 518347
WELL OWNER NAME(S): INTERCONTINENTAL POTASH CORP	PHONE (OPTIONAL):
WELL OWNER MAILING ADDRESS: 600 W. BENDER BLVD.	CITY: HOBBS STATE: NM ZIP: 88240

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	11	20.2	N
LONGITUDE	103	31	38.3	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

T24S; R 33E; SECTION 25

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1186	RODNEY HAMMER	ENVIRO-DRILL, INC.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
01-15-13	01-15-13		75'	N/A

COMPLETED WELL IS: ARTESIAN (•) DRY HOLE ( ) SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT):

DRILLING FLUID: ( ) AIR ( ) MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ( ) ROTARY ( ) HAMMER ( ) CABLE TOOL (•) OTHER – SPECIFY: AUGER

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	75	8"	N/A	N/A	N/A	N/A	N/A

STATE ENGINEER OFFICE ROSWELL, NM 2013 JAN 30 P 1:00

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	C-3602	POD NUMBER	POD 2	TRN NUMBER	518397
LOCATION	T24S - R33E - Sec 25.144				PAGE 1 OF 2

aka C-3600 POD 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	1	1	BROWN SILTY SAND, LOOSE	○ Y ◉ N	N/A
1	21	20	CALICHE WHITE SILTY SAND, VERY DENSE	○ Y ◉ N	N/A
21	47	76	SHALE GREEN SILTY SAND, VERY DENSE	○ Y ◉ N	N/A
47	53	6	SHALE RED SILTY SAND, VERY DENSE	○ Y ◉ N	N/A
53	75	22	SHALE GREEN SILTY SAND, VERY DENSE	○ Y ◉ N	N/A
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
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				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	

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

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

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

STATE ENGINEER OFFICE ROSWELL, N.M. 2013 JAN 30 P 1:

6. SIGNATURE

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

Rodney Hammer — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

1-23-13 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	C-3602	POD NUMBER	2	TRN NUMBER	
LOCATION	T24S-R33E-Sec 25.144				PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
BH 16	C3600; 518382
WELL OWNER NAME(S)	PHONE (OPTIONAL)
INTERCONTINENTAL POTASH CORP	
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
600 W..BENDER BLVD.	HOBBS / NM / 88240

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	11	43.4	N
LONGITUDE	103	32	37.1	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

T24S; R 33E; SECTION 26

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1186	RODNEY HAMMER	ENVIRO-DRILL, INC.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
01-07-13	01-07-13		75'	N/A

COMPLETED WELL IS: ( ) ARTESIAN (•) DRY HOLE ( ) SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT):

DRILLING FLUID: ( ) AIR ( ) MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ( ) ROTARY ( ) HAMMER ( ) CABLE TOOL (•) OTHER – SPECIFY: AUGER

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	75	8"	N/A	N/A	N/A	N/A	N/A

STATE ENGINEER OFFICE ROSWELL, NM 2013 JAN 30 P 1:00

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	C-3600	POD NUMBER	1	TRN NUMBER	518382
LOCATION	T24S-R33E-Sec 26 · 122				PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	3	3	BROWN SILTY SAND, LOOSE	○ Y ◉ N	N/A
3	18	15	CALICHE WHITE SILTY SAND, VERY DENSE	○ Y ◉ N	N/A
18	37	19	RED SILTY SAND, VERY DENSE	○ Y ◉ N	N/A
37	75	38	SHALE GREEN SILTY SAND, VERY DENSE	○ Y ◉ N	N/A
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
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				○ Y ○ N	
				○ Y ○ N	

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

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

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

STATE ENGINEER OFFICE ROSWELL, NM 2013 JAN 30 P 1:00

6. SIGNATURE

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

Rodney Hammer — 1-23-13

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	C-3600	POD NUMBER	1	TRN NUMBER	
LOCATION	T24S - R33E - Sec 26.122				PAGE 2 OF 2

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APPENDIX B

Photographic Log

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Photographic Log
COG Operating LLC
Red Raider BKS State 001
Incident Number NAPP2313136415

Photograph 1 Date: 5/18/2023
Description: Well sign
View: West

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

Photograph 3 Date: 5/18/2023
Description: Initial assessment activities
View: North

Photograph 4 Date: 5/31/2023
Description: Delineation activities
View: Northwest

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APPENDIX C

Lithologic Soil Sampling Logs

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	Sample Name: SS01	Date: 5/31/23
	Site Name: Red Raider BKS Flare Fire	
	Incident Number: NAPP2313136415	
	Job Number: 03D2024187	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Hand Auger
Coordinates: 32.1865057, -103.5245632	Hole Diameter: ~4"	Total Depth: 1ft

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
Dry	<173	2.4	N	SS01	0.25	0.25	SP	SAND, gravel sand mix, poorly graded, light brown, noncohesive, no odor, no staining
Dry	408.8	0.4	N	SS01A	1	1	SP	SAND, gravel sand mix, poorly graded, medium brown, noncohesive, no odor, no staining
								TD at 1 ft

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Sample Name: SS02	Date: 5/31/23
Site Name: Red Raider BKS Flare Fire	
Incident Number: NAPP2313136415	
Job Number: 03D2024187	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Ronni Hayes	Method: Hand Auger
Coordinates: 32.1865384, -103.5246187	Hole Diameter: ~4"
	Total Depth: 1ft

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
Dry	<173	0.8	N	SS02	0.25	0.25	SM	SAND, silty sand mix, poorly graded, medium brown, noncohesive, no odor, no staining
Dry	<173	0.7	N	SS02A	1	1	SM	SAND, silty sand mix, poorly graded, dark brown, some cohesiveness, no odor, no staining
								TD at 1 ft

ENSOLUM

	Sample Name: SS03	Date: 5/31/23
	Site Name: Red Raider BKS Flare Fire	
	Incident Number: NAPP2313136415	
	Job Number: 03D2024187	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Hand Auger
Coordinates: 32.1864769, -103.5246474	Hole Diameter: ~4"	Total Depth: 3ft

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
Dry	700	1.9	Y	SS03	0.25	0.25	SM	SAND, silty sand mix, poorly graded, medium brown, noncohesive, odor, staing
Dry	3180.8	0.2	Y		1	1	SM	SAND, silty sand mix, poorly graded, dark brown, no cohesiveness, odor, staining
Moist	2,604	0.2	N		1.5	1.5	SM	SAND, silty sand mix, poorly graded, dark brown, some cohesiveness, odor, no staining
Moist	1,864	0.3	N		2	2	SAA	
Moist	1,036	0.4	N		2.5		SAA	
Moist	532	0.6	N	SS03A	3	3	SP	SAND, gravelly sand mix, poorly graded, light brown, noncohesive, no odor, no staining
								TD at 3 ft

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 5/26/2023 4:59:32 PM

JOB DESCRIPTION

(COP) Red Raider BKS State 001
SDG NUMBER 03D2024187

JOB NUMBER

890-4686-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

my EOL

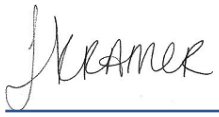
Eurofins Carlsbad

Job Notes

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

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

Authorization



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

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4686-1
Project/Site: (COP) Red Raider BKS State 001 SDG: 03D2024187

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
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: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

Job ID: 890-4686-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4686-1

Receipt
The sample was received on 5/18/2023 3:15 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

Receipt Exceptions
The following samples analyzed were received and analyzed from an unpreserved bulk soil jar: SS06 (890-4686-1).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-53895 and analytical batch 880-54127 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 surrogate recovery for the blank associated with preparation batch 880-53847 and analytical batch 880-53828 was outside the upper control limits.

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: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

Client Sample ID: SS06

Date Collected: 05/18/23 11:10
Date Received: 05/18/23 15:15
Sample Depth: 0.25'

Lab Sample ID: 890-4686-1

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		05/22/23 14:03	05/26/23 01:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/26/23 01:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/26/23 01:37	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		05/22/23 14:03	05/26/23 01:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/26/23 01:37	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		05/22/23 14:03	05/26/23 01:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*05/22/23 14:03*	*05/26/23 01:37*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*05/22/23 14:03*	*05/26/23 01:37*	*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			05/26/23 17:42	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			05/23/23 10:13	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		05/22/23 09:25	05/22/23 12:35	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		05/22/23 09:25	05/22/23 12:35	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		05/22/23 09:25	05/22/23 12:35	1
Total TPH	<49.8	U	49.8		mg/Kg		05/22/23 09:25	05/22/23 12:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*05/22/23 09:25*	*05/22/23 12:35*	*1*
o-Terphenyl	*126*		*70 - 130*	*05/22/23 09:25*	*05/22/23 12:35*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**64.4**		5.01		mg/Kg			05/23/23 14:39	1

Surrogate Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-28390-A-5 MB	Method Blank	78	96
890-4672-A-1-C MS	Matrix Spike	86	110
890-4672-A-1-D MSD	Matrix Spike Duplicate	91	101
890-4686-1	SS06	96	101
LCS 880-53895/1-A	Lab Control Sample	96	88
LCSD 880-53895/2-A	Lab Control Sample Dup	93	107
MB 880-53895/5-A	Method Blank	99	111

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-4682-A-1-D MS	Matrix Spike	121	127
890-4682-A-1-E MSD	Matrix Spike Duplicate	105	115
890-4686-1	SS06	103	126
LCS 880-53847/2-A	Lab Control Sample	96	106
LCSD 880-53847/3-A	Lab Control Sample Dup	111	124
MB 880-53847/1-A	Method Blank	179 S1+	218 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-53895/5-A
Matrix: Solid
Analysis Batch: 54127

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53895

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/22/23 14:03	05/25/23 22:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*05/22/23 14:03*	*05/25/23 22:45*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*	*05/22/23 14:03*	*05/25/23 22:45*	*1*

Lab Sample ID: LCS 880-53895/1-A
Matrix: Solid
Analysis Batch: 54127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53895

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1201		mg/Kg		120	70 - 130		
Toluene			0.100	0.1067		mg/Kg		107	70 - 130		
Ethylbenzene			0.100	0.09581		mg/Kg		96	70 - 130		
m-Xylene & p-Xylene			0.200	0.1991		mg/Kg		100	70 - 130		
o-Xylene			0.100	0.09341		mg/Kg		93	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*

Lab Sample ID: LCSD 880-53895/2-A
Matrix: Solid
Analysis Batch: 54127

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53895

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1220		mg/Kg		122	70 - 130	2	35
Toluene			0.100	0.1114		mg/Kg		111	70 - 130	4	35
Ethylbenzene			0.100	0.09653		mg/Kg		97	70 - 130	1	35
m-Xylene & p-Xylene			0.200	0.2049		mg/Kg		102	70 - 130	3	35
o-Xylene			0.100	0.09616		mg/Kg		96	70 - 130	3	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-4672-A-1-C MS
Matrix: Solid
Analysis Batch: 54127

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53895

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.100	0.09516		mg/Kg		95	70 - 130		
Toluene	<0.00201	U	0.100	0.07831		mg/Kg		78	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

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

Lab Sample ID: 890-4672-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 54127 — **Prep Batch: 53895**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.100	0.06268	F1	mg/Kg		62	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.201	0.1420		mg/Kg		71	70 - 130
o-Xylene	<0.00201	U F1	0.100	0.06740	F1	mg/Kg		67	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 890-4672-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 54127 — **Prep Batch: 53895**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0996	0.09316		mg/Kg		94	70 - 130	2	35
Toluene	<0.00201	U	0.0996	0.08153		mg/Kg		82	70 - 130	4	35
Ethylbenzene	<0.00201	U F1	0.0996	0.07255		mg/Kg		73	70 - 130	15	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1552		mg/Kg		78	70 - 130	9	35
o-Xylene	<0.00201	U F1	0.0996	0.07335		mg/Kg		73	70 - 130	8	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-28390-A-5 MB — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 54127

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg			05/25/23 12:59	1
Toluene	<0.00200	U	0.00200	mg/Kg			05/25/23 12:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			05/25/23 12:59	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			05/25/23 12:59	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			05/25/23 12:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			05/25/23 12:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*		*05/25/23 12:59*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*		*05/25/23 12:59*	*1*

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

Lab Sample ID: MB 880-53847/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53828 — **Prep Batch: 53847**

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		05/22/23 08:00	05/22/23 08:26	1

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

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

Lab Sample ID: MB 880-53847/1-A
Matrix: Solid
Analysis Batch: 53828

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53847

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		05/22/23 08:00	05/22/23 08:26	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/22/23 08:00	05/22/23 08:26	1
Total TPH	<50.0	U	50.0		mg/Kg		05/22/23 08:00	05/22/23 08:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*179*	*S1+*	*70 - 130*	*05/22/23 08:00*	*05/22/23 08:26*	*1*
o-Terphenyl	*218*	*S1+*	*70 - 130*	*05/22/23 08:00*	*05/22/23 08:26*	*1*

Lab Sample ID: LCS 880-53847/2-A
Matrix: Solid
Analysis Batch: 53828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53847

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	899.0		mg/Kg		90	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	884.1		mg/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*106*		*70 - 130*

Lab Sample ID: LCSD 880-53847/3-A
Matrix: Solid
Analysis Batch: 53828

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53847

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	999.0		mg/Kg		100	70 - 130	11	20
Diesel Range Organics (Over C10-C28)			1000	1018		mg/Kg		102	70 - 130	14	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*111*		*70 - 130*
o-Terphenyl	*124*		*70 - 130*

Lab Sample ID: 890-4682-A-1-D MS
Matrix: Solid
Analysis Batch: 53828

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53847

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1131		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)	104		998	1181		mg/Kg		108	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*121*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

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

Lab Sample ID: 890-4682-A-1-D MS
Matrix: Solid
Analysis Batch: 53828

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53847

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	127		70 - 130

Lab Sample ID: 890-4682-A-1-E MSD
Matrix: Solid
Analysis Batch: 53828

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53847

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	940.5		mg/Kg		89	70 - 130	18	20
Diesel Range Organics (Over C10-C28)	104		999	1032		mg/Kg		93	70 - 130	13	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	115		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-53878/1-A
Matrix: Solid
Analysis Batch: 53996

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			05/23/23 13:34	1

Lab Sample ID: LCS 880-53878/2-A
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.1		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-53878/3-A
Matrix: Solid
Analysis Batch: 53996

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	248.9		mg/Kg		100	90 - 110	1	20

Lab Sample ID: 880-28616-A-1-C MS
Matrix: Solid
Analysis Batch: 53996

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	200		249	435.3		mg/Kg		95	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-28616-A-1-D MSD
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	200		249	434.5		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

GC VOA

Prep Batch: 53895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4686-1	SS06	Total/NA	Solid	5035	
MB 880-53895/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-53895/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-53895/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4672-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-4672-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 54127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4686-1	SS06	Total/NA	Solid	8021B	53895
880-28390-A-5 MB	Method Blank	Total/NA	Solid	8021B	
MB 880-53895/5-A	Method Blank	Total/NA	Solid	8021B	53895
LCS 880-53895/1-A	Lab Control Sample	Total/NA	Solid	8021B	53895
LCSD 880-53895/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	53895
890-4672-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	53895
890-4672-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	53895

Analysis Batch: 54294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4686-1	SS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 53828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4686-1	SS06	Total/NA	Solid	8015B NM	53847
MB 880-53847/1-A	Method Blank	Total/NA	Solid	8015B NM	53847
LCS 880-53847/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	53847
LCSD 880-53847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	53847
890-4682-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	53847
890-4682-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	53847

Prep Batch: 53847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4686-1	SS06	Total/NA	Solid	8015NM Prep	
MB 880-53847/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-53847/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-53847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4682-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4682-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 53971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4686-1	SS06	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 53878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4686-1	SS06	Soluble	Solid	DI Leach	
MB 880-53878/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

HPLC/IC (Continued)

Leach Batch: 53878 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-28616-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-28616-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 53996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4686-1	SS06	Soluble	Solid	300.0	53878
MB 880-53878/1-A	Method Blank	Soluble	Solid	300.0	53878
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	300.0	53878
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	53878
880-28616-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	53878
880-28616-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	53878

Lab Chronicle

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

Client Sample ID: SS06

Date Collected: 05/18/23 11:10
Date Received: 05/18/23 15:15

Lab Sample ID: 890-4686-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	53895	05/22/23 14:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54127	05/26/23 01:37	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			54294	05/26/23 17:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			53971	05/23/23 10:13	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	53847	05/22/23 09:25	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	53828	05/22/23 12:35	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	53878	05/22/23 12:16	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53996	05/23/23 14:39	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4686-1
SDG: 03D2024187

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4686-1	SS06	Solid	05/18/23 11:10	05/18/23 15:15	0.25'

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 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, dnikanorov@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:	(COP) Red Raider BKS State 001	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2024187	Due Date:	
Project Location:	32.1865, -103.5246	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Dmitry Nikanorov		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TMH007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.4
Total Containers:		Corrected Temperature:	5.2

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)	TPH (8015)	BTEX (8021)	Sample Comments
SS06	S	5/18/2023	11:10	0.25'	Grab	1		x	x	x	

890-4686 Chain of Custody

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 DK		5.18.23 1515	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4686-1
SDG Number: 03D2024187

Login Number: 4686
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: 890-4686-1
SDG Number: 03D2024187

Login Number: 4686
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/22/23 08:42 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	

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/26/2023 5:00:01 PM

JOB DESCRIPTION

(COP) Red Raider BKS State 001
SDG NUMBER 03D2024187

JOB NUMBER

890-4687-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

my EOL

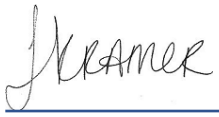
Eurofins Carlsbad

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
5/26/2023 5:00:01 PM

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

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Laboratory Job ID: 890-4687-1
SDG: 03D2024187

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4687-1
Project/Site: (COP) Red Raider BKS State 001 SDG: 03D2024187

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
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: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

Job ID: 890-4687-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4687-1

Receipt
The sample was received on 5/18/2023 3:15 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-53895 and analytical batch 880-54127 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 surrogate recovery for the blank associated with preparation batch 880-53847 and analytical batch 880-53828 was outside the upper control limits.

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: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

Client Sample ID: SS05

Date Collected: 05/18/23 11:00
Date Received: 05/18/23 15:15
Sample Depth: 0.25'

Lab Sample ID: 890-4687-1

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		05/22/23 14:03	05/26/23 06:51	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/26/23 06:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/26/23 06:51	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		05/22/23 14:03	05/26/23 06:51	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/26/23 06:51	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		05/22/23 14:03	05/26/23 06:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*05/22/23 14:03*	*05/26/23 06:51*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*05/22/23 14:03*	*05/26/23 06:51*	*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			05/26/23 17:42	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			05/23/23 10:13	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		05/22/23 09:25	05/22/23 12:57	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		05/22/23 09:25	05/22/23 12:57	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		05/22/23 09:25	05/22/23 12:57	1
Total TPH	<49.8	U	49.8		mg/Kg		05/22/23 09:25	05/22/23 12:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*05/22/23 09:25*	*05/22/23 12:57*	*1*
o-Terphenyl	*116*		*70 - 130*	*05/22/23 09:25*	*05/22/23 12:57*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**51.8**		4.99		mg/Kg			05/23/23 14:44	1

Surrogate Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-28390-A-5 MB	Method Blank	78	96										
890-4672-A-1-C MS	Matrix Spike	86	110										
890-4672-A-1-D MSD	Matrix Spike Duplicate	91	101										
890-4687-1	SS05	98	96										
LCS 880-53895/1-A	Lab Control Sample	96	88										
LCSD 880-53895/2-A	Lab Control Sample Dup	93	107										
MB 880-53895/5-A	Method Blank	99	111										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-4682-A-1-D MS	Matrix Spike	121	127										
890-4682-A-1-E MSD	Matrix Spike Duplicate	105	115										
890-4687-1	SS05	103	116										
LCS 880-53847/2-A	Lab Control Sample	96	106										
LCSD 880-53847/3-A	Lab Control Sample Dup	111	124										
MB 880-53847/1-A	Method Blank	179 S1+	218 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-53895/5-A
Matrix: Solid
Analysis Batch: 54127

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53895

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:03	05/25/23 22:45	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/22/23 14:03	05/25/23 22:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*05/22/23 14:03*	*05/25/23 22:45*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*	*05/22/23 14:03*	*05/25/23 22:45*	*1*

Lab Sample ID: LCS 880-53895/1-A
Matrix: Solid
Analysis Batch: 54127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53895

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1201		mg/Kg		120	70 - 130		
Toluene			0.100	0.1067		mg/Kg		107	70 - 130		
Ethylbenzene			0.100	0.09581		mg/Kg		96	70 - 130		
m-Xylene & p-Xylene			0.200	0.1991		mg/Kg		100	70 - 130		
o-Xylene			0.100	0.09341		mg/Kg		93	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*

Lab Sample ID: LCSD 880-53895/2-A
Matrix: Solid
Analysis Batch: 54127

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53895

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1220		mg/Kg		122	70 - 130	2	35
Toluene			0.100	0.1114		mg/Kg		111	70 - 130	4	35
Ethylbenzene			0.100	0.09653		mg/Kg		97	70 - 130	1	35
m-Xylene & p-Xylene			0.200	0.2049		mg/Kg		102	70 - 130	3	35
o-Xylene			0.100	0.09616		mg/Kg		96	70 - 130	3	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-4672-A-1-C MS
Matrix: Solid
Analysis Batch: 54127

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53895

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.100	0.09516		mg/Kg		95	70 - 130		
Toluene	<0.00201	U	0.100	0.07831		mg/Kg		78	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

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

Lab Sample ID: 890-4672-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 54127 — **Prep Batch: 53895**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.100	0.06268	F1	mg/Kg		62	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.201	0.1420		mg/Kg		71	70 - 130
o-Xylene	<0.00201	U F1	0.100	0.06740	F1	mg/Kg		67	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 890-4672-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 54127 — **Prep Batch: 53895**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0996	0.09316		mg/Kg		94	70 - 130	2	35
Toluene	<0.00201	U	0.0996	0.08153		mg/Kg		82	70 - 130	4	35
Ethylbenzene	<0.00201	U F1	0.0996	0.07255		mg/Kg		73	70 - 130	15	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1552		mg/Kg		78	70 - 130	9	35
o-Xylene	<0.00201	U F1	0.0996	0.07335		mg/Kg		73	70 - 130	8	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-28390-A-5 MB — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 54127

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg			05/25/23 12:59	1
Toluene	<0.00200	U	0.00200	mg/Kg			05/25/23 12:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			05/25/23 12:59	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			05/25/23 12:59	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			05/25/23 12:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			05/25/23 12:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*		*05/25/23 12:59*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*		*05/25/23 12:59*	*1*

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

Lab Sample ID: MB 880-53847/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53828 — **Prep Batch: 53847**

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		05/22/23 08:00	05/22/23 08:26	1

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

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

Lab Sample ID: MB 880-53847/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53828 — **Prep Batch: 53847**

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		05/22/23 08:00	05/22/23 08:26	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/22/23 08:00	05/22/23 08:26	1
Total TPH	<50.0	U	50.0		mg/Kg		05/22/23 08:00	05/22/23 08:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*179*	*S1+*	*70 - 130*	*05/22/23 08:00*	*05/22/23 08:26*	*1*
o-Terphenyl	*218*	*S1+*	*70 - 130*	*05/22/23 08:00*	*05/22/23 08:26*	*1*

Lab Sample ID: LCS 880-53847/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53828 — **Prep Batch: 53847**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	899.0		mg/Kg		90	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	884.1		mg/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*106*		*70 - 130*

Lab Sample ID: LCSD 880-53847/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53828 — **Prep Batch: 53847**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	999.0		mg/Kg		100	70 - 130	11	20
Diesel Range Organics (Over C10-C28)			1000	1018		mg/Kg		102	70 - 130	14	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*111*		*70 - 130*
o-Terphenyl	*124*		*70 - 130*

Lab Sample ID: 890-4682-A-1-D MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53828 — **Prep Batch: 53847**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1131		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)	104		998	1181		mg/Kg		108	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*121*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

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

Lab Sample ID: 890-4682-A-1-D MS
Matrix: Solid
Analysis Batch: 53828

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53847

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	127		70 - 130

Lab Sample ID: 890-4682-A-1-E MSD
Matrix: Solid
Analysis Batch: 53828

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53847

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	940.5		mg/Kg		89	70 - 130	18	20
Diesel Range Organics (Over C10-C28)	104		999	1032		mg/Kg		93	70 - 130	13	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	115		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-53878/1-A
Matrix: Solid
Analysis Batch: 53996

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			05/23/23 13:34	1

Lab Sample ID: LCS 880-53878/2-A
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.1		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-53878/3-A
Matrix: Solid
Analysis Batch: 53996

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	248.9		mg/Kg		100	90 - 110	1	20

Lab Sample ID: 880-28616-A-1-C MS
Matrix: Solid
Analysis Batch: 53996

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	200		249	435.3		mg/Kg		95	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-28616-A-1-D MSD
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	200		249	434.5		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

GC VOA

Prep Batch: 53895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4687-1	SS05	Total/NA	Solid	5035	
MB 880-53895/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-53895/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-53895/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4672-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-4672-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 54127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4687-1	SS05	Total/NA	Solid	8021B	53895
880-28390-A-5 MB	Method Blank	Total/NA	Solid	8021B	
MB 880-53895/5-A	Method Blank	Total/NA	Solid	8021B	53895
LCS 880-53895/1-A	Lab Control Sample	Total/NA	Solid	8021B	53895
LCSD 880-53895/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	53895
890-4672-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	53895
890-4672-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	53895

Analysis Batch: 54297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4687-1	SS05	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 53828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4687-1	SS05	Total/NA	Solid	8015B NM	53847
MB 880-53847/1-A	Method Blank	Total/NA	Solid	8015B NM	53847
LCS 880-53847/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	53847
LCSD 880-53847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	53847
890-4682-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	53847
890-4682-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	53847

Prep Batch: 53847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4687-1	SS05	Total/NA	Solid	8015NM Prep	
MB 880-53847/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-53847/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-53847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4682-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4682-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 53972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4687-1	SS05	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 53878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4687-1	SS05	Soluble	Solid	DI Leach	
MB 880-53878/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

HPLC/IC (Continued)

Leach Batch: 53878 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-28616-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-28616-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 53996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4687-1	SS05	Soluble	Solid	300.0	53878
MB 880-53878/1-A	Method Blank	Soluble	Solid	300.0	53878
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	300.0	53878
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	53878
880-28616-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	53878
880-28616-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	53878

Lab Chronicle

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

Client Sample ID: SS05

Date Collected: 05/18/23 11:00
Date Received: 05/18/23 15:15

Lab Sample ID: 890-4687-1

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			5.01 g	5 mL	53895	05/22/23 14:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	54127	05/26/23 06:51	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			54297	05/26/23 17:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			53972	05/23/23 10:13	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	53847	05/22/23 09:25	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	53828	05/22/23 12:57	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	53878	05/22/23 12:16	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53996	05/23/23 14:44	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4687-1
SDG: 03D2024187

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4687-1	SS05	Solid	05/18/23 11:00	05/18/23 15:15	0.25'

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Chain of Custody

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

Work Order No: _____

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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, dnikanorov@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:	(COP) Red Raider BKS State 001	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2024187	Due Date:	
Project Location:	32.1865, -103.5246	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Dmitry Nikanorov		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	Yes No
Samples Received Intact:	(Yes) No	Thermometer ID:	TM009
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	5.7
Total Containers:		Corrected Temperature:	5.5

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

ANALYSIS REQUEST

890-4687 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021	Sample Comments
SS05	S	5/18/2023	11:00	0.25'	Grab	1		x	x	x	

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		5.18.23 1515			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4687-1
SDG Number: 03D2024187

Login Number: 4687
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: 890-4687-1
SDG Number: 03D2024187

Login Number: 4687
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/22/23 08:42 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	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kalei Jennings
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 5/25/2023 10:34:42 AM

JOB DESCRIPTION

(COP) Red Raider BKS State 001
SDG NUMBER 03D2024187

JOB NUMBER

890-4688-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

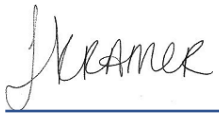
Eurofins Carlsbad

Job Notes

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

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

Authorization



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

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Laboratory Job ID: 890-4688-1
SDG: 03D2024187

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
S1+	Surrogate recovery exceeds control limits, 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: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

Job ID: 890-4688-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4688-1

Receipt
The sample was received on 5/18/2023 3:15 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: SS04 (890-4688-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-53992 recovered above the upper control limit for Benzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-53992 recovered above the upper control limit for Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. 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 samples were outside control limits: (CCV 880-53992/20), (CCV 880-53992/33), (LCS 880-53899/1-A) and (LCSD 880-53899/2-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following samples were outside control limits: (MB 880-53899/5-A), (890-4679-A-1-E), (890-4679-A-1-C MS) and (890-4679-A-1-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (CCV 880-53992/51). Evidence of matrix interferences is not obvious.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-53899 and analytical batch 880-53992 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.

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 880-53877 and analytical batch 880-53824 was outside the upper control limits.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-53877 and analytical batch 880-53824 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

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

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

Client Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

Client Sample ID: SS04

Date Collected: 05/18/23 10:50
Date Received: 05/18/23 15:15
Sample Depth: 0.25'

Lab Sample ID: 890-4688-1

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		05/22/23 15:18	05/24/23 16:33	1
Toluene	<0.00200	U *+	0.00200		mg/Kg		05/22/23 15:18	05/24/23 16:33	1
Ethylbenzene	<0.00200	U *+	0.00200		mg/Kg		05/22/23 15:18	05/24/23 16:33	1
m-Xylene & p-Xylene	<0.00401	U *+	0.00401		mg/Kg		05/22/23 15:18	05/24/23 16:33	1
o-Xylene	<0.00200	U *+	0.00200		mg/Kg		05/22/23 15:18	05/24/23 16:33	1
Xylenes, Total	<0.00401	U *+	0.00401		mg/Kg		05/22/23 15:18	05/24/23 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*334*	*S1+*	*70 - 130*	*05/22/23 15:18*	*05/24/23 16:33*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*05/22/23 15:18*	*05/24/23 16:33*	*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			05/25/23 08:44	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			05/23/23 08:21	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 *1	49.8		mg/Kg		05/22/23 12:14	05/22/23 16:53	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		05/22/23 12:14	05/22/23 16:53	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		05/22/23 12:14	05/22/23 16:53	1
Total TPH	<49.8	U	49.8		mg/Kg		05/22/23 12:14	05/22/23 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*05/22/23 12:14*	*05/22/23 16:53*	*1*
o-Terphenyl	*105*		*70 - 130*	*05/22/23 12:14*	*05/22/23 16:53*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**71.7**		5.02		mg/Kg			05/23/23 14:50	1

Surrogate Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-4679-A-1-C MS	Matrix Spike	174 S1+	72
890-4679-A-1-D MSD	Matrix Spike Duplicate	182 S1+	103
890-4688-1	SS04	334 S1+	98
LCS 880-53899/1-A	Lab Control Sample	233 S1+	141 S1+
LCSD 880-53899/2-A	Lab Control Sample Dup	237 S1+	146 S1+
MB 880-53896/5-A	Method Blank	112	77
MB 880-53899/5-A	Method Blank	158 S1+	71

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-4688-1	SS04	98	105
890-4695-A-1-B MS	Matrix Spike	101	90
890-4695-A-1-C MSD	Matrix Spike Duplicate	96	84
LCS 880-53877/2-A	Lab Control Sample	85	83
LCSD 880-53877/3-A	Lab Control Sample Dup	96	97
MB 880-53877/1-A	Method Blank	161 S1+	175 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-53896/5-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53896

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/22/23 14:48	05/23/23 16:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*05/22/23 14:48*	*05/23/23 16:24*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*05/22/23 14:48*	*05/23/23 16:24*	*1*

Lab Sample ID: MB 880-53899/5-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53899

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/22/23 15:18	05/24/23 06:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*158*	*S1+*	*70 - 130*	*05/22/23 15:18*	*05/24/23 06:10*	*1*
1,4-Difluorobenzene (Surr)	*71*		*70 - 130*	*05/22/23 15:18*	*05/24/23 06:10*	*1*

Lab Sample ID: LCS 880-53899/1-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53899

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1828	*+	mg/Kg		183	70 - 130		
Toluene			0.100	0.1504	*+	mg/Kg		150	70 - 130		
Ethylbenzene			0.100	0.1439	*+	mg/Kg		144	70 - 130		
m-Xylene & p-Xylene			0.200	0.3027	*+	mg/Kg		151	70 - 130		
o-Xylene			0.100	0.1519	*+	mg/Kg		152	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*233*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*141*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-53899/2-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53899

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1682	*+	mg/Kg		168	70 - 130	8	35

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QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

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

Lab Sample ID: LCSD 880-53899/2-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53899

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1519	*+	mg/Kg		152	70 - 130	1	35
Ethylbenzene			0.100	0.1449	*+	mg/Kg		145	70 - 130	1	35
m-Xylene & p-Xylene			0.200	0.3028	*+	mg/Kg		151	70 - 130	0	35
o-Xylene			0.100	0.1575	*+	mg/Kg		157	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*237*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*146*	*S1+*	*70 - 130*

Lab Sample ID: 890-4679-A-1-C MS
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53899

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U *+	0.0998	0.1223		mg/Kg		123	70 - 130
Toluene	<0.00200	U *+	0.0998	0.1086		mg/Kg		109	70 - 130
Ethylbenzene	<0.00200	U *+	0.0998	0.1006		mg/Kg		101	70 - 130
m-Xylene & p-Xylene	<0.00401	U *+	0.200	0.2114		mg/Kg		106	70 - 130
o-Xylene	<0.00200	U *+	0.0998	0.1046		mg/Kg		105	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*174*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*72*		*70 - 130*

Lab Sample ID: 890-4679-A-1-D MSD
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53899

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U *+	0.100	0.1287		mg/Kg		128	70 - 130	5	35
Toluene	<0.00200	U *+	0.100	0.1171		mg/Kg		117	70 - 130	8	35
Ethylbenzene	<0.00200	U *+	0.100	0.1115		mg/Kg		111	70 - 130	10	35
m-Xylene & p-Xylene	<0.00401	U *+	0.200	0.2335		mg/Kg		117	70 - 130	10	35
o-Xylene	<0.00200	U *+	0.100	0.1159		mg/Kg		116	70 - 130	10	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*182*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

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

Lab Sample ID: MB 880-53877/1-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53877

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		05/22/23 10:14	05/22/23 11:17	1

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

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

Lab Sample ID: MB 880-53877/1-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53877

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		05/22/23 10:14	05/22/23 11:17	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/22/23 10:14	05/22/23 11:17	1
Total TPH	<50.0	U	50.0		mg/Kg		05/22/23 10:14	05/22/23 11:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*161*	*S1+*	*70 - 130*	*05/22/23 10:14*	*05/22/23 11:17*	*1*
o-Terphenyl	*175*	*S1+*	*70 - 130*	*05/22/23 10:14*	*05/22/23 11:17*	*1*

Lab Sample ID: LCS 880-53877/2-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53877

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	936.1		mg/Kg		94	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1017		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*85*		*70 - 130*
o-Terphenyl	*83*		*70 - 130*

Lab Sample ID: LCSD 880-53877/3-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53877

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1169	*1	mg/Kg		117	70 - 130	22	20
Diesel Range Organics (Over C10-C28)			1000	1106		mg/Kg		111	70 - 130	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*97*		*70 - 130*

Lab Sample ID: 890-4695-A-1-B MS
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53877

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 *1	998	974.5		mg/Kg		95	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	998	1101		mg/Kg		108	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

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

Lab Sample ID: 890-4695-A-1-B MS
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53877

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	90		70 - 130

Lab Sample ID: 890-4695-A-1-C MSD
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53877

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 *1	999	1003		mg/Kg		98	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	1032		mg/Kg		101	70 - 130	6	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	84		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-53878/1-A
Matrix: Solid
Analysis Batch: 53996

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			05/23/23 13:34	1

Lab Sample ID: LCS 880-53878/2-A
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.1		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-53878/3-A
Matrix: Solid
Analysis Batch: 53996

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	248.9		mg/Kg		100	90 - 110	1	20

Lab Sample ID: 880-28616-A-1-C MS
Matrix: Solid
Analysis Batch: 53996

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	200		249	435.3		mg/Kg		95	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-28616-A-1-D MSD
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	200		249	434.5		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

GC VOA

Prep Batch: 53896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-53896/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 53899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4688-1	SS04	Total/NA	Solid	5035	
MB 880-53899/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-53899/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-53899/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4679-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-4679-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 53992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4688-1	SS04	Total/NA	Solid	8021B	53899
MB 880-53896/5-A	Method Blank	Total/NA	Solid	8021B	53896
MB 880-53899/5-A	Method Blank	Total/NA	Solid	8021B	53899
LCS 880-53899/1-A	Lab Control Sample	Total/NA	Solid	8021B	53899
LCSD 880-53899/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	53899
890-4679-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	53899
890-4679-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	53899

Analysis Batch: 54130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4688-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 53824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4688-1	SS04	Total/NA	Solid	8015B NM	53877
MB 880-53877/1-A	Method Blank	Total/NA	Solid	8015B NM	53877
LCS 880-53877/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	53877
LCSD 880-53877/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	53877
890-4695-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	53877
890-4695-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	53877

Prep Batch: 53877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4688-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-53877/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-53877/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-53877/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4695-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4695-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 53949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4688-1	SS04	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

HPLC/IC

Leach Batch: 53878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4688-1	SS04	Soluble	Solid	DI Leach	
MB 880-53878/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-28616-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-28616-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 53996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4688-1	SS04	Soluble	Solid	300.0	53878
MB 880-53878/1-A	Method Blank	Soluble	Solid	300.0	53878
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	300.0	53878
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	53878
880-28616-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	53878
880-28616-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	53878

Lab Chronicle

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

Client Sample ID: SS04

Date Collected: 05/18/23 10:50
Date Received: 05/18/23 15:15

Lab Sample ID: 890-4688-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	53899	05/22/23 15:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	53992	05/24/23 16:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54130	05/25/23 08:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			53949	05/23/23 08:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	53877	05/22/23 12:14	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	53824	05/22/23 16:53	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	53878	05/22/23 12:16	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53996	05/23/23 14:50	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4688-1
SDG: 03D2024187

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4688-1	SS04	Solid	05/18/23 10:50	05/18/23 15:15	0.25'

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 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, dnikanorov@ensolum.com

Work Order Comments

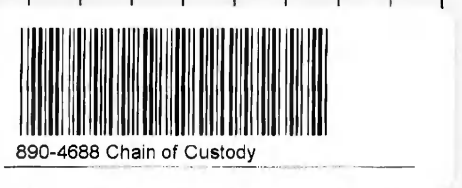
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	(COP) Red Raider BKS State 001	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2024187	Due Date:	
Project Location:	32.1865, -103.5246	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Dmitry Nikanorov		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	NUM007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.4
Total Containers:		Corrected Temperature:	5.2

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)	TPH (8015)	BTEX (8021)	Sample Comments
SS04	S	5/18/2023	10:50	0.25'	Grab	1		x	x	x	

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		5.18.23 1515			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4688-1
SDG Number: 03D2024187

Login Number: 4688
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: 890-4688-1
SDG Number: 03D2024187

Login Number: 4688
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/22/23 08:42 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	

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/25/2023 10:34:42 AM

JOB DESCRIPTION

(COP) Red Raider BKS State 001
SDG NUMBER 03D2024187

JOB NUMBER

890-4689-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

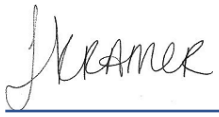
Eurofins Carlsbad

Job Notes

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

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

Authorization



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5/25/2023 10:34:42 AM

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

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Laboratory Job ID: 890-4689-1
SDG: 03D2024187

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
S1+	Surrogate recovery exceeds control limits, 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: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

Job ID: 890-4689-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4689-1

Receipt
The sample was received on 5/18/2023 3:15 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: SS07 (890-4689-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-53992 recovered above the upper control limit for Benzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-53992 recovered above the upper control limit for Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. 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 samples were outside control limits: (CCV 880-53992/20), (CCV 880-53992/33), (LCS 880-53899/1-A) and (LCSD 880-53899/2-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following samples were outside control limits: (MB 880-53899/5-A), (890-4679-A-1-E), (890-4679-A-1-C MS) and (890-4679-A-1-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (CCV 880-53992/51). Evidence of matrix interferences is not obvious.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-53899 and analytical batch 880-53992 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.

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 880-53877 and analytical batch 880-53824 was outside the upper control limits.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-53877 and analytical batch 880-53824 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

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

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

Client Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

Client Sample ID: SS07

Date Collected: 05/18/23 11:20
Date Received: 05/18/23 15:15
Sample Depth: 0.25

Lab Sample ID: 890-4689-1

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		05/22/23 15:18	05/24/23 17:00	1
Toluene	<0.00199	U *+	0.00199		mg/Kg		05/22/23 15:18	05/24/23 17:00	1
Ethylbenzene	<0.00199	U *+	0.00199		mg/Kg		05/22/23 15:18	05/24/23 17:00	1
m-Xylene & p-Xylene	<0.00398	U *+	0.00398		mg/Kg		05/22/23 15:18	05/24/23 17:00	1
o-Xylene	<0.00199	U *+	0.00199		mg/Kg		05/22/23 15:18	05/24/23 17:00	1
Xylenes, Total	<0.00398	U *+	0.00398		mg/Kg		05/22/23 15:18	05/24/23 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*52*	*S1-*	*70 - 130*	*05/22/23 15:18*	*05/24/23 17:00*	*1*
1,4-Difluorobenzene (Surr)	*134*	*S1+*	*70 - 130*	*05/22/23 15:18*	*05/24/23 17:00*	*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			05/25/23 08:44	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			05/23/23 08:21	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	49.9		mg/Kg		05/22/23 12:14	05/22/23 17:14	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/22/23 12:14	05/22/23 17:14	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/22/23 12:14	05/22/23 17:14	1
Total TPH	<49.9	U	49.9		mg/Kg		05/22/23 12:14	05/22/23 17:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*05/22/23 12:14*	*05/22/23 17:14*	*1*
o-Terphenyl	*104*		*70 - 130*	*05/22/23 12:14*	*05/22/23 17:14*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41.7**		5.02		mg/Kg			05/23/23 14:55	1

Surrogate Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-4679-A-1-C MS	Matrix Spike	174 S1+	72
890-4679-A-1-D MSD	Matrix Spike Duplicate	182 S1+	103
890-4689-1	SS07	52 S1-	134 S1+
LCS 880-53899/1-A	Lab Control Sample	233 S1+	141 S1+
LCSD 880-53899/2-A	Lab Control Sample Dup	237 S1+	146 S1+
MB 880-53896/5-A	Method Blank	112	77
MB 880-53899/5-A	Method Blank	158 S1+	71

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-4689-1	SS07	97	104
890-4695-A-1-B MS	Matrix Spike	101	90
890-4695-A-1-C MSD	Matrix Spike Duplicate	96	84
LCS 880-53877/2-A	Lab Control Sample	85	83
LCSD 880-53877/3-A	Lab Control Sample Dup	96	97
MB 880-53877/1-A	Method Blank	161 S1+	175 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-53896/5-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53896

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/22/23 14:48	05/23/23 16:24	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/22/23 14:48	05/23/23 16:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*05/22/23 14:48*	*05/23/23 16:24*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*05/22/23 14:48*	*05/23/23 16:24*	*1*

Lab Sample ID: MB 880-53899/5-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53899

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/22/23 15:18	05/24/23 06:10	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/22/23 15:18	05/24/23 06:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*158*	*S1+*	*70 - 130*	*05/22/23 15:18*	*05/24/23 06:10*	*1*
1,4-Difluorobenzene (Surr)	*71*		*70 - 130*	*05/22/23 15:18*	*05/24/23 06:10*	*1*

Lab Sample ID: LCS 880-53899/1-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53899

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1828	*+	mg/Kg		183	70 - 130		
Toluene			0.100	0.1504	*+	mg/Kg		150	70 - 130		
Ethylbenzene			0.100	0.1439	*+	mg/Kg		144	70 - 130		
m-Xylene & p-Xylene			0.200	0.3027	*+	mg/Kg		151	70 - 130		
o-Xylene			0.100	0.1519	*+	mg/Kg		152	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*233*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*141*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-53899/2-A
Matrix: Solid
Analysis Batch: 53992

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53899

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1682	*+	mg/Kg		168	70 - 130	8	35

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

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

Lab Sample ID: LCSD 880-53899/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53992 — **Prep Batch: 53899**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1519	*+	mg/Kg		152	70 - 130	1	35
Ethylbenzene			0.100	0.1449	*+	mg/Kg		145	70 - 130	1	35
m-Xylene & p-Xylene			0.200	0.3028	*+	mg/Kg		151	70 - 130	0	35
o-Xylene			0.100	0.1575	*+	mg/Kg		157	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*237*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*146*	*S1+*	*70 - 130*

Lab Sample ID: 890-4679-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53992 — **Prep Batch: 53899**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U *+	0.0998	0.1223		mg/Kg		123	70 - 130
Toluene	<0.00200	U *+	0.0998	0.1086		mg/Kg		109	70 - 130
Ethylbenzene	<0.00200	U *+	0.0998	0.1006		mg/Kg		101	70 - 130
m-Xylene & p-Xylene	<0.00401	U *+	0.200	0.2114		mg/Kg		106	70 - 130
o-Xylene	<0.00200	U *+	0.0998	0.1046		mg/Kg		105	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*174*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*72*		*70 - 130*

Lab Sample ID: 890-4679-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53992 — **Prep Batch: 53899**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U *+	0.100	0.1287		mg/Kg		128	70 - 130	5	35
Toluene	<0.00200	U *+	0.100	0.1171		mg/Kg		117	70 - 130	8	35
Ethylbenzene	<0.00200	U *+	0.100	0.1115		mg/Kg		111	70 - 130	10	35
m-Xylene & p-Xylene	<0.00401	U *+	0.200	0.2335		mg/Kg		117	70 - 130	10	35
o-Xylene	<0.00200	U *+	0.100	0.1159		mg/Kg		116	70 - 130	10	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*182*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

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

Lab Sample ID: MB 880-53877/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 53824 — **Prep Batch: 53877**

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		05/22/23 10:14	05/22/23 11:17	1

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

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

Lab Sample ID: MB 880-53877/1-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53877

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		05/22/23 10:14	05/22/23 11:17	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/22/23 10:14	05/22/23 11:17	1
Total TPH	<50.0	U	50.0		mg/Kg		05/22/23 10:14	05/22/23 11:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*161*	*S1+*	*70 - 130*	*05/22/23 10:14*	*05/22/23 11:17*	*1*
o-Terphenyl	*175*	*S1+*	*70 - 130*	*05/22/23 10:14*	*05/22/23 11:17*	*1*

Lab Sample ID: LCS 880-53877/2-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53877

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	936.1		mg/Kg		94	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1017		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*85*		*70 - 130*
o-Terphenyl	*83*		*70 - 130*

Lab Sample ID: LCSD 880-53877/3-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53877

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1169	*1	mg/Kg		117	70 - 130	22	20
Diesel Range Organics (Over C10-C28)			1000	1106		mg/Kg		111	70 - 130	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*97*		*70 - 130*

Lab Sample ID: 890-4695-A-1-B MS
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53877

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 *1	998	974.5		mg/Kg		95	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	998	1101		mg/Kg		108	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

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

Lab Sample ID: 890-4695-A-1-B MS
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53877

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	90		70 - 130

Lab Sample ID: 890-4695-A-1-C MSD
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53877

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 *1	999	1003		mg/Kg		98	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	1032		mg/Kg		101	70 - 130	6	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	84		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-53878/1-A
Matrix: Solid
Analysis Batch: 53996

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			05/23/23 13:34	1

Lab Sample ID: LCS 880-53878/2-A
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.1		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-53878/3-A
Matrix: Solid
Analysis Batch: 53996

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	248.9		mg/Kg		100	90 - 110	1	20

Lab Sample ID: 880-28616-A-1-C MS
Matrix: Solid
Analysis Batch: 53996

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	200		249	435.3		mg/Kg		95	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-28616-A-1-D MSD
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	200		249	434.5		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

GC VOA

Prep Batch: 53896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-53896/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 53899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4689-1	SS07	Total/NA	Solid	5035	
MB 880-53899/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-53899/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-53899/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4679-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-4679-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 53992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4689-1	SS07	Total/NA	Solid	8021B	53899
MB 880-53896/5-A	Method Blank	Total/NA	Solid	8021B	53896
MB 880-53899/5-A	Method Blank	Total/NA	Solid	8021B	53899
LCS 880-53899/1-A	Lab Control Sample	Total/NA	Solid	8021B	53899
LCSD 880-53899/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	53899
890-4679-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	53899
890-4679-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	53899

Analysis Batch: 54131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4689-1	SS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 53824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4689-1	SS07	Total/NA	Solid	8015B NM	53877
MB 880-53877/1-A	Method Blank	Total/NA	Solid	8015B NM	53877
LCS 880-53877/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	53877
LCSD 880-53877/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	53877
890-4695-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	53877
890-4695-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	53877

Prep Batch: 53877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4689-1	SS07	Total/NA	Solid	8015NM Prep	
MB 880-53877/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-53877/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-53877/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4695-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4695-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 53950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4689-1	SS07	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

HPLC/IC

Leach Batch: 53878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4689-1	SS07	Soluble	Solid	DI Leach	
MB 880-53878/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-28616-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-28616-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 53996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4689-1	SS07	Soluble	Solid	300.0	53878
MB 880-53878/1-A	Method Blank	Soluble	Solid	300.0	53878
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	300.0	53878
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	53878
880-28616-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	53878
880-28616-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	53878

Lab Chronicle

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

Client Sample ID: SS07

Date Collected: 05/18/23 11:20
Date Received: 05/18/23 15:15

Lab Sample ID: 890-4689-1

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	53899	05/22/23 15:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	53992	05/24/23 17:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54131	05/25/23 08:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			53950	05/23/23 08:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	53877	05/22/23 12:14	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	53824	05/22/23 17:14	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	53878	05/22/23 12:16	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53996	05/23/23 14:55	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4689-1
SDG: 03D2024187

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4689-1	SS07	Solid	05/18/23 11:20	05/18/23 15:15	0.25

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 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, dnikanorov@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:	(COP) Red Raider BKS State 001	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2024187	Due Date:	
Project Location:	32.1865, -103.5246	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Dmitry Nikanorov		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	IR#007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.4
Total Containers:		Corrected Temperature:	5.2

Preservative Codes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Sample Comments
SS07	S	5/18/2023	11:20	0.25'	Grab	1		x	x	x	

890-4689 Chain of Custody

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 DN		5.18.23 1515	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4689-1
SDG Number: 03D2024187

Login Number: 4689
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: 890-4689-1
SDG Number: 03D2024187

Login Number: 4689
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/22/23 08:42 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	

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/24/2023 12:51:28 PM

JOB DESCRIPTION

(COP) Red Raider BKS State 001
SDG NUMBER 03D2024187

JOB NUMBER

890-4690-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

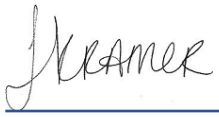
Eurofins Carlsbad

Job Notes

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

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

Authorization



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

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Laboratory Job ID: 890-4690-1
SDG: 03D2024187

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4690-1
Project/Site: (COP) Red Raider BKS State 001 SDG: 03D2024187

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
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: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Job ID: 890-4690-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4690-1

Receipt
The samples were received on 5/18/2023 3:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-53877 and analytical batch 880-53824 was outside the upper control limits.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-53877 and analytical batch 880-53824 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

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

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

Client Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Client Sample ID: SS01

Lab Sample ID: 890-4690-1
Matrix: Solid
Date Collected: 05/18/23 10:20
Date Received: 05/18/23 15:20
Sample Depth: 0.25'

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		05/23/23 09:51	05/23/23 14:01	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/23/23 09:51	05/23/23 14:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/23/23 09:51	05/23/23 14:01	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		05/23/23 09:51	05/23/23 14:01	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/23/23 09:51	05/23/23 14:01	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		05/23/23 09:51	05/23/23 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*	*05/23/23 09:51*	*05/23/23 14:01*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*05/23/23 09:51*	*05/23/23 14:01*	*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			05/24/23 11:22	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			05/23/23 08:21	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 *1	49.8		mg/Kg		05/22/23 12:14	05/22/23 17:35	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		05/22/23 12:14	05/22/23 17:35	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		05/22/23 12:14	05/22/23 17:35	1
Total TPH	<49.8	U	49.8		mg/Kg		05/22/23 12:14	05/22/23 17:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*05/22/23 12:14*	*05/22/23 17:35*	*1*
o-Terphenyl	*106*		*70 - 130*	*05/22/23 12:14*	*05/22/23 17:35*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**106**		4.96		mg/Kg			05/23/23 15:01	1

Client Sample ID: SS02

Lab Sample ID: 890-4690-2
Matrix: Solid
Date Collected: 05/18/23 10:30
Date Received: 05/18/23 15:20
Sample Depth: 0.25'

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		05/23/23 09:51	05/23/23 19:16	1
Toluene	<0.00201	U	0.00201		mg/Kg		05/23/23 09:51	05/23/23 19:16	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		05/23/23 09:51	05/23/23 19:16	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		05/23/23 09:51	05/23/23 19:16	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		05/23/23 09:51	05/23/23 19:16	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		05/23/23 09:51	05/23/23 19:16	1

Client Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Client Sample ID: SS02

Lab Sample ID: 890-4690-2
Matrix: Solid
Date Collected: 05/18/23 10:30
Date Received: 05/18/23 15:20
Sample Depth: 0.25'

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*05/23/23 09:51*	*05/23/23 19:16*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*05/23/23 09:51*	*05/23/23 19:16*	*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			05/24/23 11:22	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			05/23/23 08:21	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 *1	49.8	mg/Kg		05/22/23 12:14	05/22/23 17:57	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		05/22/23 12:14	05/22/23 17:57	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		05/22/23 12:14	05/22/23 17:57	1
Total TPH	<49.8	U	49.8	mg/Kg		05/22/23 12:14	05/22/23 17:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*97*		*70 - 130*	*05/22/23 12:14*	*05/22/23 17:57*	*1*
o-Terphenyl	*103*		*70 - 130*	*05/22/23 12:14*	*05/22/23 17:57*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**101**		4.98	mg/Kg			05/23/23 15:06	1

Client Sample ID: SS03

Lab Sample ID: 890-4690-3
Matrix: Solid
Date Collected: 05/18/23 10:40
Date Received: 05/18/23 15:20
Sample Depth: 0.25'

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		05/23/23 09:51	05/23/23 19:36	1
Toluene	<0.00202	U	0.00202	mg/Kg		05/23/23 09:51	05/23/23 19:36	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		05/23/23 09:51	05/23/23 19:36	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		05/23/23 09:51	05/23/23 19:36	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		05/23/23 09:51	05/23/23 19:36	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		05/23/23 09:51	05/23/23 19:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*05/23/23 09:51*	*05/23/23 19:36*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*05/23/23 09:51*	*05/23/23 19:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			05/24/23 11:22	1

Client Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Client Sample ID: SS03

Date Collected: 05/18/23 10:40
Date Received: 05/18/23 15:20
Sample Depth: 0.25'

Lab Sample ID: 890-4690-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			05/23/23 08:21	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	49.9		mg/Kg		05/22/23 12:14	05/22/23 18:18	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		05/22/23 12:14	05/22/23 18:18	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/22/23 12:14	05/22/23 18:18	1
Total TPH	<49.9	U	49.9		mg/Kg		05/22/23 12:14	05/22/23 18:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*101*		*70 - 130*	*05/22/23 12:14*	*05/22/23 18:18*	*1*
o-Terphenyl	*109*		*70 - 130*	*05/22/23 12:14*	*05/22/23 18:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**101**		5.03		mg/Kg			05/23/23 15:22	1

Surrogate Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-4690-1	SS01	80	89
890-4690-1 MS	SS01	93	95
890-4690-1 MSD	SS01	91	105
890-4690-2	SS02	95	93
890-4690-3	SS03	93	90
LCS 880-53960/1-A	Lab Control Sample	83	123
LCSD 880-53960/2-A	Lab Control Sample Dup	97	112
MB 880-53960/5-A	Method Blank	85	100

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-4690-1	SS01	99	106
890-4690-2	SS02	97	103
890-4690-3	SS03	101	109
890-4695-A-1-B MS	Matrix Spike	101	90
890-4695-A-1-C MSD	Matrix Spike Duplicate	96	84
LCS 880-53877/2-A	Lab Control Sample	85	83
LCSD 880-53877/3-A	Lab Control Sample Dup	96	97
MB 880-53877/1-A	Method Blank	161 S1+	175 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-53960/5-A
Matrix: Solid
Analysis Batch: 53967

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53960

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/23/23 09:51	05/23/23 13:32	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/23/23 09:51	05/23/23 13:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/23/23 09:51	05/23/23 13:32	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/23/23 09:51	05/23/23 13:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/23/23 09:51	05/23/23 13:32	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/23/23 09:51	05/23/23 13:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*05/23/23 09:51*	*05/23/23 13:32*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*05/23/23 09:51*	*05/23/23 13:32*	*1*

Lab Sample ID: LCS 880-53960/1-A
Matrix: Solid
Analysis Batch: 53967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53960

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1231		mg/Kg		123	70 - 130		
Toluene			0.100	0.09465		mg/Kg		95	70 - 130		
Ethylbenzene			0.100	0.09213		mg/Kg		92	70 - 130		
m-Xylene & p-Xylene			0.200	0.1784		mg/Kg		89	70 - 130		
o-Xylene			0.100	0.07972		mg/Kg		80	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*123*		*70 - 130*

Lab Sample ID: LCSD 880-53960/2-A
Matrix: Solid
Analysis Batch: 53967

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53960

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1212		mg/Kg		121	70 - 130	1	35
Toluene			0.100	0.1039		mg/Kg		104	70 - 130	9	35
Ethylbenzene			0.100	0.1028		mg/Kg		103	70 - 130	11	35
m-Xylene & p-Xylene			0.200	0.2107		mg/Kg		105	70 - 130	17	35
o-Xylene			0.100	0.09677		mg/Kg		97	70 - 130	19	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*

Lab Sample ID: 890-4690-1 MS
Matrix: Solid
Analysis Batch: 53967

Client Sample ID: SS01
Prep Type: Total/NA
Prep Batch: 53960

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U	0.101	0.1221		mg/Kg		121	70 - 130		
Toluene	<0.00200	U	0.101	0.1138		mg/Kg		113	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

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

Lab Sample ID: 890-4690-1 MS
Matrix: Solid
Analysis Batch: 53967

Client Sample ID: SS01
Prep Type: Total/NA
Prep Batch: 53960

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.101	0.1113		mg/Kg		110	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.202	0.2251		mg/Kg		112	70 - 130
o-Xylene	<0.00200	U	0.101	0.1004		mg/Kg		100	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: 890-4690-1 MSD
Matrix: Solid
Analysis Batch: 53967

Client Sample ID: SS01
Prep Type: Total/NA
Prep Batch: 53960

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0990	0.1258		mg/Kg		127	70 - 130	3	35
Toluene	<0.00200	U	0.0990	0.1112		mg/Kg		112	70 - 130	2	35
Ethylbenzene	<0.00200	U	0.0990	0.1032		mg/Kg		104	70 - 130	8	35
m-Xylene & p-Xylene	<0.00399	U	0.198	0.2053		mg/Kg		104	70 - 130	9	35
o-Xylene	<0.00200	U	0.0990	0.09190		mg/Kg		93	70 - 130	9	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-53877/1-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53877

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		05/22/23 10:14	05/22/23 11:17	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/22/23 10:14	05/22/23 11:17	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/22/23 10:14	05/22/23 11:17	1
Total TPH	<50.0	U	50.0		mg/Kg		05/22/23 10:14	05/22/23 11:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*161*	*S1+*	*70 - 130*	*05/22/23 10:14*	*05/22/23 11:17*	*1*
o-Terphenyl	*175*	*S1+*	*70 - 130*	*05/22/23 10:14*	*05/22/23 11:17*	*1*

Lab Sample ID: LCS 880-53877/2-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53877

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	936.1		mg/Kg		94	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

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

Lab Sample ID: LCS 880-53877/2-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53877

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics (Over C10-C28)			1000	1017		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*85*		*70 - 130*
o-Terphenyl	*83*		*70 - 130*

Lab Sample ID: LCSD 880-53877/3-A
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53877

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1169	*1	mg/Kg		117	70 - 130	22	20
Diesel Range Organics (Over C10-C28)			1000	1106		mg/Kg		111	70 - 130	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*97*		*70 - 130*

Lab Sample ID: 890-4695-A-1-B MS
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53877

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 *1	998	974.5		mg/Kg		95	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	998	1101		mg/Kg		108	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*
o-Terphenyl	*90*		*70 - 130*

Lab Sample ID: 890-4695-A-1-C MSD
Matrix: Solid
Analysis Batch: 53824

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53877

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 *1	999	1003		mg/Kg		98	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	1032		mg/Kg		101	70 - 130	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-53878/1-A
Matrix: Solid
Analysis Batch: 53996

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			05/23/23 13:34	1

Lab Sample ID: LCS 880-53878/2-A
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.1		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-53878/3-A
Matrix: Solid
Analysis Batch: 53996

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	248.9		mg/Kg		100	90 - 110	1	20

Lab Sample ID: 890-4690-2 MS
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: SS02
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	101		249	326.4		mg/Kg		91	90 - 110		

Lab Sample ID: 890-4690-2 MSD
Matrix: Solid
Analysis Batch: 53996

Client Sample ID: SS02
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	101		249	325.7		mg/Kg		90	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

GC VOA

Prep Batch: 53960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4690-1	SS01	Total/NA	Solid	5035	
890-4690-2	SS02	Total/NA	Solid	5035	
890-4690-3	SS03	Total/NA	Solid	5035	
MB 880-53960/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-53960/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-53960/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4690-1 MS	SS01	Total/NA	Solid	5035	
890-4690-1 MSD	SS01	Total/NA	Solid	5035	

Analysis Batch: 53967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4690-1	SS01	Total/NA	Solid	8021B	53960
890-4690-2	SS02	Total/NA	Solid	8021B	53960
890-4690-3	SS03	Total/NA	Solid	8021B	53960
MB 880-53960/5-A	Method Blank	Total/NA	Solid	8021B	53960
LCS 880-53960/1-A	Lab Control Sample	Total/NA	Solid	8021B	53960
LCSD 880-53960/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	53960
890-4690-1 MS	SS01	Total/NA	Solid	8021B	53960
890-4690-1 MSD	SS01	Total/NA	Solid	8021B	53960

Analysis Batch: 54065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4690-1	SS01	Total/NA	Solid	Total BTEX	
890-4690-2	SS02	Total/NA	Solid	Total BTEX	
890-4690-3	SS03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 53824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4690-1	SS01	Total/NA	Solid	8015B NM	53877
890-4690-2	SS02	Total/NA	Solid	8015B NM	53877
890-4690-3	SS03	Total/NA	Solid	8015B NM	53877
MB 880-53877/1-A	Method Blank	Total/NA	Solid	8015B NM	53877
LCS 880-53877/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	53877
LCSD 880-53877/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	53877
890-4695-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	53877
890-4695-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	53877

Prep Batch: 53877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4690-1	SS01	Total/NA	Solid	8015NM Prep	
890-4690-2	SS02	Total/NA	Solid	8015NM Prep	
890-4690-3	SS03	Total/NA	Solid	8015NM Prep	
MB 880-53877/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-53877/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-53877/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4695-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4695-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

GC Semi VOA

Analysis Batch: 53951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4690-1	SS01	Total/NA	Solid	8015 NM	
890-4690-2	SS02	Total/NA	Solid	8015 NM	
890-4690-3	SS03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 53878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4690-1	SS01	Soluble	Solid	DI Leach	
890-4690-2	SS02	Soluble	Solid	DI Leach	
890-4690-3	SS03	Soluble	Solid	DI Leach	
MB 880-53878/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4690-2 MS	SS02	Soluble	Solid	DI Leach	
890-4690-2 MSD	SS02	Soluble	Solid	DI Leach	

Analysis Batch: 53996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4690-1	SS01	Soluble	Solid	300.0	53878
890-4690-2	SS02	Soluble	Solid	300.0	53878
890-4690-3	SS03	Soluble	Solid	300.0	53878
MB 880-53878/1-A	Method Blank	Soluble	Solid	300.0	53878
LCS 880-53878/2-A	Lab Control Sample	Soluble	Solid	300.0	53878
LCSD 880-53878/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	53878
890-4690-2 MS	SS02	Soluble	Solid	300.0	53878
890-4690-2 MSD	SS02	Soluble	Solid	300.0	53878

Lab Chronicle

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Client Sample ID: SS01

Date Collected: 05/18/23 10:20
Date Received: 05/18/23 15:20

Lab Sample ID: 890-4690-1
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			5.01 g	5 mL	53960	05/23/23 09:51	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	53967	05/23/23 14:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54065	05/24/23 11:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			53951	05/23/23 08:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	53877	05/22/23 12:14	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	53824	05/22/23 17:35	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	53878	05/22/23 12:16	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53996	05/23/23 15:01	SMC	EET MID

Client Sample ID: SS02

Date Collected: 05/18/23 10:30
Date Received: 05/18/23 15:20

Lab Sample ID: 890-4690-2
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	53960	05/23/23 09:51	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	53967	05/23/23 19:16	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54065	05/24/23 11:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			53951	05/23/23 08:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	53877	05/22/23 12:14	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	53824	05/22/23 17:57	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	53878	05/22/23 12:16	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53996	05/23/23 15:06	SMC	EET MID

Client Sample ID: SS03

Date Collected: 05/18/23 10:40
Date Received: 05/18/23 15:20

Lab Sample ID: 890-4690-3
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			4.96 g	5 mL	53960	05/23/23 09:51	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	53967	05/23/23 19:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			54065	05/24/23 11:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			53951	05/23/23 08:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	53877	05/22/23 12:14	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	53824	05/22/23 18:18	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	53878	05/22/23 12:16	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53996	05/23/23 15:22	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

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: (COP) Red Raider BKS State 001

Job ID: 890-4690-1
SDG: 03D2024187

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4690-1	SS01	Solid	05/18/23 10:20	05/18/23 15:20	0.25'
890-4690-2	SS02	Solid	05/18/23 10:30	05/18/23 15:20	0.25'
890-4690-3	SS03	Solid	05/18/23 10:40	05/18/23 15:20	0.25'

Chain of Custody

eurofins | Environment Testing Xenco

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, dnikanorov@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:	(COP) Red Raider BKS State 001	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2024187	Due Date:	
Project Location:	32.1865, -103.5246	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Dmitry Nikanorov		
PO #:			

SAMPLE RECEIPT	Temp Blank: Yes No	Wet Ice: Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TM007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.4
Total Containers:		Corrected Temperature:	5.2

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)	TPH (8015)	BTEX (8021	Sample Comments
SS01	S	5/18/2023	10:20	0.25'	Grab	1		x	x	x	
SS02	S	5/18/2023	10:30	0.25'	Grab	1		x	x	x	
SS03	S	5/18/2023	10:40	0.25'	Grab	1		x	x	x	

ANALYSIS REQUEST

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			5.18.23 1515			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4690-1
SDG Number: 03D2024187

Login Number: 4690
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: 890-4690-1
SDG Number: 03D2024187

Login Number: 4690
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/22/23 08:42 AM

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

ENSOLUM

APPENDIX E

NMOCD Notifications

From: Enviro, OCD, EMNRD
To: Hadlie Green
Cc: Bratcher, Michael, EMNRD
Subject: RE: [EXTERNAL] COP - Sampling Notification (Week of 5/29/2023)
Date: Wednesday, May 24, 2023 3:30:50 PM
Attachments: image005.jpg
image006.png
image007.png
image008.png
image009.png

[**EXTERNAL EMAIL**]

Hadlie,

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

JH

Jocelyn Harimon ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
http:// **www.emnrd.nm.gov**

From: Hadlie Green <hgreen@ensolum.com>
Sent: Wednesday, May 24, 2023 2:16 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Kalei Jennings <kjennings@ensolum.com>
Subject: [EXTERNAL] COP - Sampling Notification (Week of 5/29/2023)

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 May 29, 2023.

- Red Raider BKS State 001 / NAPP23136415
  - Sampling Date: 5/31/2023 @ 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	NAPP2313136415
District RP	
Facility ID	fAPP2203856832
Application ID	

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Jacob Laird	Contact Telephone	(575) 703-5482
Contact email	Jacon.Laird@ConocoPhillips.com	Incident # *(assigned by OCD)*	NAPP2313136415
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.1865 Longitude -103.5246
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Red Raider BKS State 001	Site Type	Tank Battery
Date Release Discovered	May 2, 2023	API# *(if applicable)*	

Unit Letter	Section	Township	Range	County
J	25	24S	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) 0.1009	Volume Recovered (bbls) 0
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by an oil dump failure resulting in a flare fire on and off the pad.
No fluid was recovered due to the fire burning off any standing fluid.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2313136415
District RP	
Facility ID	fAPP2203856832
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? The release involved a fire.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Immediate notice was given by Jacob Laird via e-mail May 2, 2023 at 10:19 AM to spills@slo.state.nm.us and ocd.enviro@state.nm.us.

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

NAPP2313136415

L48 Spill Volume Estimate Form - Fill In Gray Cells

Facility Name & Well Number(s):	RED RAIDER BKS BATTERY				Release Discovery Date & Time:	5/2/23 @ 530am			
Provide any known details about the event:	HAD AN AIR COMP FAULT ON 5/1/23 @ 9PM, THEN AIR COMP LLPSI @10PM, THEN PROD SEP LVL SWITCH HH ON 5/2/23 @ 3AM CAUSING FLUIDS TO GO TO FLARE. ALSO , THERE IS A NO COMMS ON SITE, PLC IS GETTING ALARMS BUT NO COMMS IS NOT ALLOWING PERSONNEL TO RECEIVE ALARMS.				Primary Cause (dropdown):		Secondary Cause (dropdown):		
	Recovered Volume (bbl.) (if available, not included in volume calculations)	Method of Determination (dropdown)	Release Type (dropdown):		> 1/2" of Rain in Last 24 Hours (dropdown):		% Rainwater Recovered (not included in volume calculations, informational):		
BU: Permian	Asset Area: DBE - Asset Avg.		Field Measurement	Oil	No				
Known Volume (dropdown):	No								
Known Area (dropdown):	No								

Spill Calculation - Subsurface Spill - Rectangle

Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Average Depth (in.)	On/Off Pad (dropdown)	Soil Spilled-Fluid Saturation (%.)	Estimated volume of each area (bbl.)	Total Estimated Volume of Spill (bbl.)	Remediation Recommendation: Total Estimated Contaminated Soil, uncompacted, 25% (yd^3.)	Remediation Recommendation: Current Rule of Thumb - RMR Handover Volume, (yd^3.)
Rectangle A	8.0	2.0	0.3	On-Pad	10.50%	0.06	0.01	0.02	
Rectangle B	11.0	4.0	0.3	Off-Pad	15.02%	0.16	0.02	0.04	
Rectangle C	6.0	21.0	0.3	Off-Pad	15.02%	0.47	0.07	0.12	
Rectangle D						0.00		0.00	
Rectangle E						0.00		0.00	750
Rectangle F						0.00		0.00	
Rectangle G						0.00		0.00	
Rectangle H						0.00		0.00	
Rectangle I						0.00		0.00	
Rectangle J						0.00		0.00	
Total Subsurface Volume Released:							0.1009	0.18	BU

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: 215933
	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	NAPP2313136415
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	51-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2313136415
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: ___Jacob Laird_____ Title: __Environmental Engineer_____

Signature: Jacob Laird Date: __6/13/2023_____

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

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2313136415
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☐ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: ____Jacob Laird_____ Title: _____Environmental Engineer_____

Signature: ___Jacob Laird_____ Date: ____6/13/2023_____

email: _____Jacob.Laird@Conocophillips.com_____ Telephone: _____575-703-5482_____

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Nelson Velez Date: 09/19/2023

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

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 230756

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 230756
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	9/19/2023