



May 6, 2024

**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  
SEMU Permian 127 Flowline Release  
Incident Number nAPP2331056887  
Lea County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of Maverick Permian, LLC (Maverick), has prepared this *Closure Request* to document assessment, excavation, and soil sampling activities performed at the SEMU Permian 127 Flowline Release (Site). The purpose of the assessment, excavation, and soil sampling activities was to address impacts to soil resulting from a release of crude oil and produced water at the Site. Based on the excavation activities and laboratory analytical results from the soil sampling events, Maverick is submitting this *Closure Request*, describing remediation that has occurred and requesting closure for Incident Number nAPP2331056887.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit A, Section 25, Township 17 South, Range 35 East, in Lea County, New Mexico (32.5495° N, -103.1991° W) and is associated with oil and gas exploration and production operations on Private Land.

On November 6, 2023, corrosion of a flowline resulted in the release of approximately 4 barrels (bbls) of crude oil and 35 bbls of produced water into the surrounding pasture. A vacuum was immediately dispatched to the site and recovered 20 bbls of free-standing fluid. Maverick reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on November 6, 2023. The release was assigned Incident Number nAPP2331056887.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized to assess applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization are summarized below and detailed in the NMOCD permitting portal Form C-141 Site Characterization section. Potential Site receptors are identified on Figure 1.

Depth to groundwater at the Site is greater than 55 feet below ground surface (bgs) based on the nearest groundwater well/soil boring data. The closest soil boring with depth to groundwater data is soil boring DTW-01 located approximately 0.40 miles southwest of the Site. The soil boring was drilled during March 2024 to a depth of 55 feet bgs. A field geologist logged and described soils continuously. The borehole

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lithologic log is included in Appendix A. No groundwater was encountered in the borehole to a depth of 55 feet bgs. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater is greater than 55 feet bgs. The borehole was properly abandoned using hydrated bentonite chips. All wells used for depth to groundwater determination are presented on Figure 1.

The closest continuously flowing or significant watercourse is greater than 300 feet from 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
- TPH: 2,500 mg/kg
- Chloride: 10,000 mg/kg

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

## SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On March 11, 2024, site assessment activities were conducted at the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Five assessment soil samples (SS01 through SS05) were collected around the visible release extent from a depth of 0.5 feet bgs to confirm the lateral extent of the surface release. Four boreholes (BH01 through BH04) were advanced via hand auger within the release extent, to assess the extent of impacted soil within the release. The boreholes were advanced to a depth of 4 feet bgs. Soil samples were collected from the boreholes at depths ranging from 1-foot to 4 feet bgs. The release extent and soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site visit and a photographic log is included in Appendix B.

The assessment soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody procedures to Cardinal Laboratories for analysis of the following constituents of concern (COC): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 4500.

Laboratory analytical results for assessment soil samples SS01 through SS05, collected around the release extent, indicated that all COC concentrations were compliant with the most stringent Table I Closure Criteria and confirmed the lateral extent of the surface release. Laboratory analytical results for



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the soil samples collected from boreholes BH01 through BH04, advanced within the release extent, indicated that TPH concentrations exceeded the Site Closure Criteria and/or reclamation requirements. Laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Appendix C. Based on visible staining in the release area and laboratory analytical results for the borehole soil samples, excavation activities were scheduled.

## EXCAVATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

Between March 18, 2024 and April 15, 2024, Ensolum personnel were at the Site to oversee excavation of impacted soil. The flowline was abandoned and removed from the Site. To direct excavation activities, soil was field screened for volatile aromatic hydrocarbons (VOCs) utilizing a calibrated photoionization detector (PID) and chloride Hach® chloride QuanTab® test strips. Excavation activities were performed using a track-mounted backhoe and transport vehicles. The excavation was completed to a depth ranging from 4 feet to 15 feet bgs.

Following removal of impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor and sidewalls of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS29 were collected from the floor of the excavation from depths ranging from 4 feet to 15 feet bgs. Composite soil samples SW01 through SW06 were collected from the sidewalls of the excavation at depths ranging from the ground surface to 15 feet bgs. The excavation soil samples were handled and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations were mapped utilizing a handheld GPS and are presented on Figure 3.

Laboratory analytical results for the excavation floor and sidewall samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirements, where applicable. Laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included as Appendix C.

The excavation measured approximately 5,700 square feet in areal extent. A total of approximately 3,200 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Disposal Facility located in Hobbs, New Mexico. After completion of confirmation sampling, the excavation was secured with fencing.

## RECLAMATION ACTIVITIES

Upon completion of excavation activities and receipt of final laboratory analytical results, the excavation was backfilled with locally procured topsoil. One representative 5-point composite sample (BF01) was collected from the backfill material. The backfill soil sample was handled and analyzed following the same procedures as described above. Laboratory analytical results for the backfill soil sample confirmed compliance with the NMOCD requirement for the reclaimed area to contain non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg and TPH concentrations less than 100 mg/kg. The laboratory analytical results are summarized on the attached Table 1 and the complete laboratory analytical report is included as Appendix C.

Following backfill activities, the disturbed area was contoured to match the surrounding topography and the surface was prepared for seeding. The disturbed pasture area was seeded with the BLM sandy sites seed mix #2 at the rate specified in pounds of pure live seed (PLS) per acre.

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Species/Cultivar	PLS/Acre
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

The seed mix was distributed with a broadcast seed spreader and harrowed in. Photographs of the reclaimed excavation area are provided in Appendix B.

The Site will be monitored for vegetation growth to ensure that reclamation activities were successful. Focus for this phase will be to prevent erosion and site degradation, and to monitor for and treat invasive and noxious weed species.

- Erosion control of the newly reclaimed areas includes prompt revegetation and contouring of the surface to prevent concentrated surface water flow.
- Annual inspections will take place at the location to assess revegetation progress until vegetation is consistent with local natural vegetation density.
- If necessary, an additional application of the BLM seed mix will be applied.
- Noxious and invasive weeds will be identified and treated by licensed contracted herbicide applicator or mechanically removed.

A *Revegetation Report* will be submitted to the NMOCD once vegetation growth in the reclaimed pasture area has uniform vegetative cover that reflects a life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds, per NMAC 19.15.29.13 D.(3).

## CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the November 6, 2023, release of crude oil and produced water. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirements, where applicable. Based on the laboratory analytical results, no further remediation is required.

Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. Depth to groundwater was determined to be greater than 55 feet bgs within 0.5 miles of the Site and no sensitive receptors were identified near the release extent. Maverick believes the remedial actions completed are protective of human health, the environment, and groundwater and respectfully requests closure for Incident nAPP2331056887.

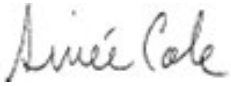
If you have any questions or comments, please contact Ms. Aimee Cole at (720) 384-7365 or [acole@ensolum.com](mailto:acole@ensolum.com).



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Sincerely,  
**Ensolum, LLC**



Aimee Cole  
Senior Managing Scientist

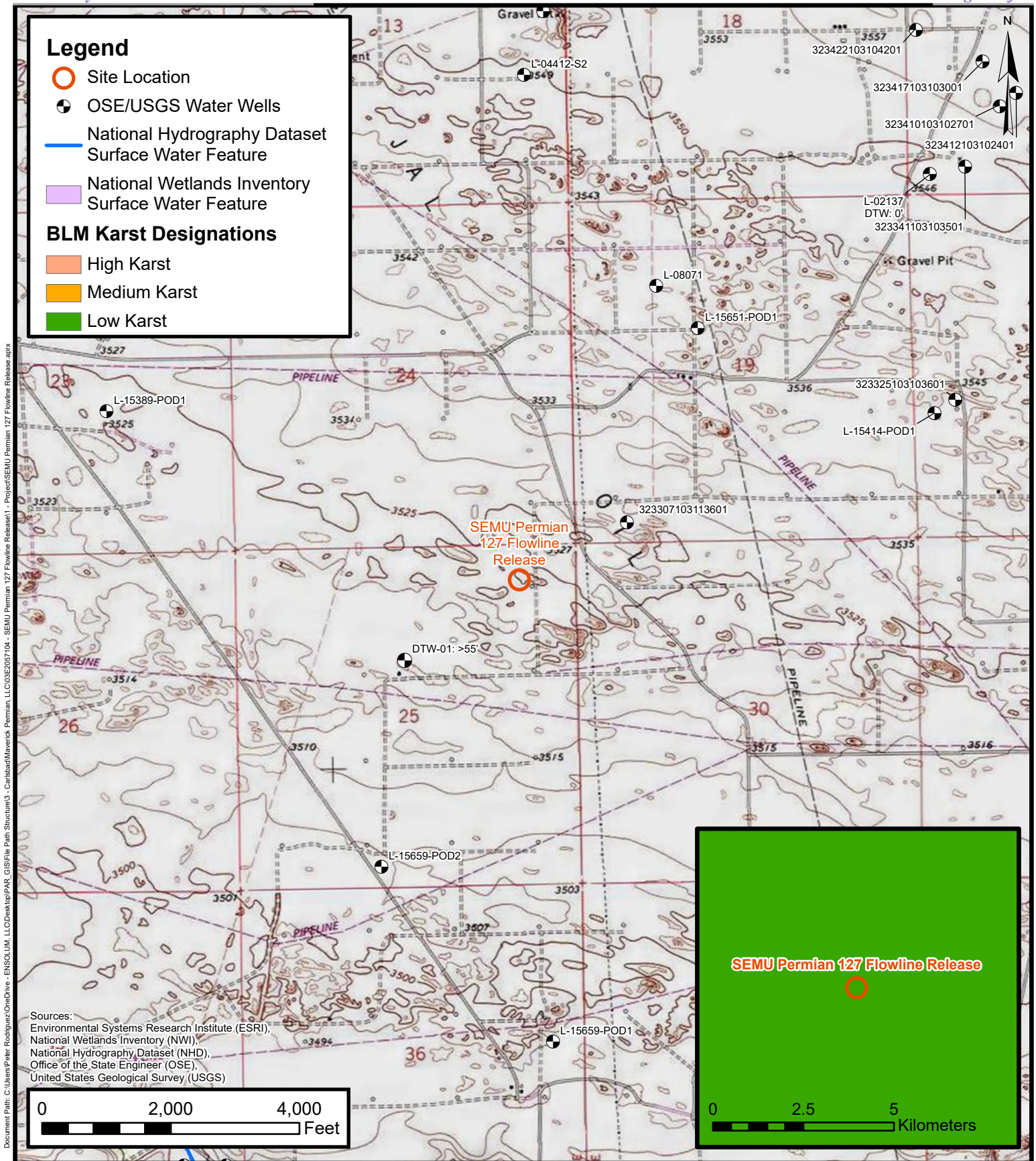
cc: Bryce Wagoner, Maverick Natural Resources

Appendices:

Figure 1	Site Receptor Map
Figure 2	Assessment Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Laboratory Analytical Reports & Chain of Custody Documentation



FIGURES



## Site Receptor Map

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 Unit A, Sec 25, T20S, R37E  
 Lea County, New Mexico

FIGURE

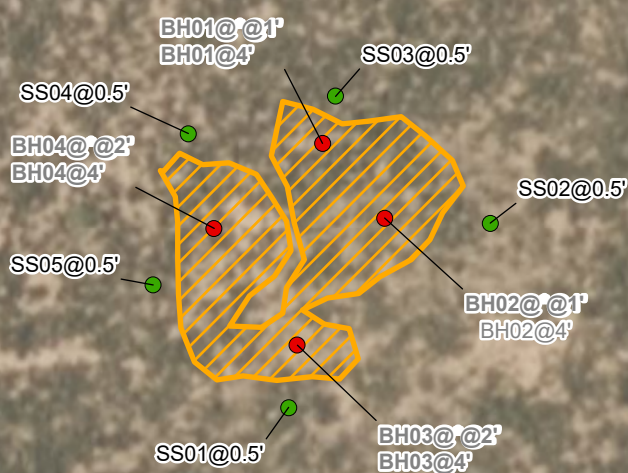
1





## Legend

- Assessment Soil Sample in Compliance with NMOCD Closure Criteria
- Assessment Soil Sample with Concentrations Exceeding Closure Criteria
- Release Extent



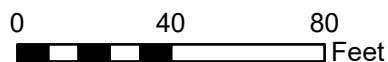
### Notes:

Sample ID @ Depth Below Ground Surface

Grey text represents samples that have been excavated

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

Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.



Source:  
Bing Maps



## Assessment Soil Sample Locations

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 Unit A, Sec 25, T20S, R37E  
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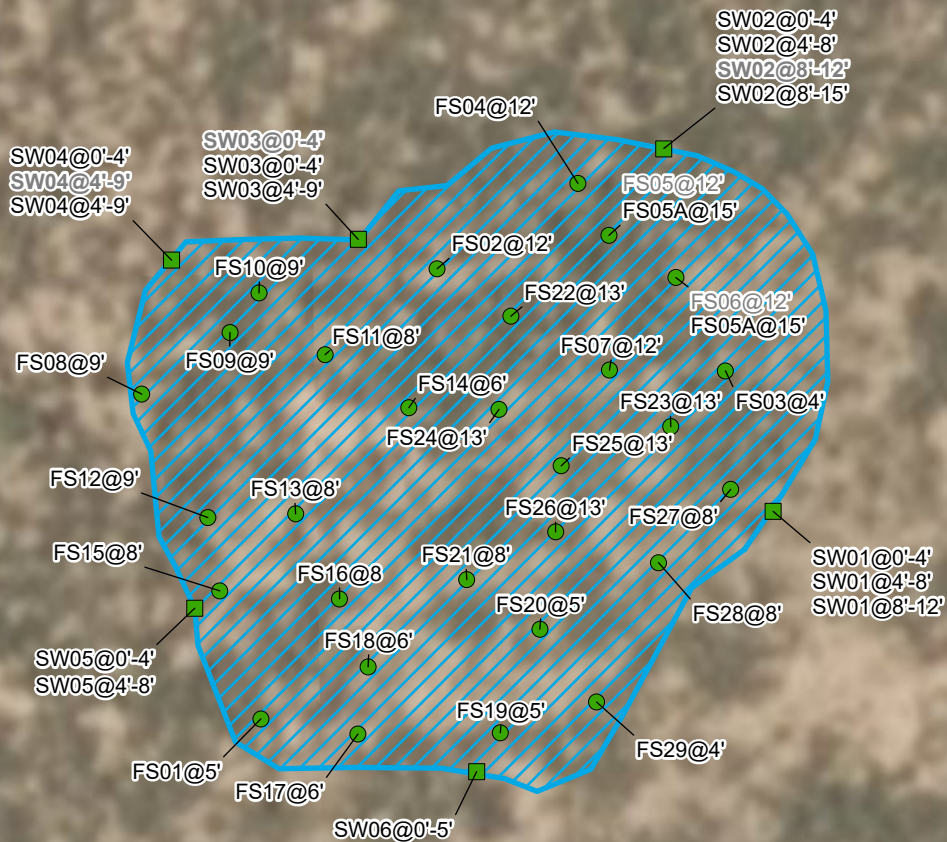
FIGURE

2



**Legend**

- Excavation Floor Sample in Compliance with NMOCD Closure Criteria
- Excavation Sidewall Soil Sample in Compliance with NMOCD Closure Criteria
- ▨ Excavation Extent



Notes:  
 Sample ID @ Depth Below Ground Surface  
 Grey text represents samples that have been excavated.  
 Concentrations in **bold** exceed the NMOCD Table 1  
 Closure Criteria or reclamation standard where applicable.

0 20 40  
 Feet

Source:  
 Bing Maps



## Excavation Soil Sample Locations

Maverick Permian, LLC  
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 Unit A, Sec 25, T20S, R37E  
 Lea County, New Mexico

FIGURE  
**3**



TABLES



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 SEMU Permian 127 Flowline Release  
 Maverick Permian, LLC  
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Sample Designation	Sample 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
NMOCD Reclamation Requirement for the top four feet			NE	NE	NE	NE	NE	NE	100	600
Assessment Soil Samples										
SS01	03/11/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS02	03/11/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS03	03/11/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS04	03/11/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS05	03/11/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
BH01*	03/11/2024	1	0.802	79.9	2,480	40,300	10,100	42,780	52,880	512
BH01	03/11/2024	4	1.58	101	2,740	30,200	7,120	32,940	40,060	688
BH02*	03/11/2024	1	<0.050	<0.300	12.1	1,410	331	1,422	1,753	331
BH02	03/11/2024	4	<0.050	<0.300	<10.0	849	213	849	1,062	1,600
BH03*	03/11/2024	2	<0.050	6.89	788	37,700	8,290	38,488	46,778	208
BH03	03/11/2024	4	<0.050	<0.300	<50.0	4,170	951	4,170	5,121	704
BH04*	03/11/2024	2	2.61	133	2,730	25,500	4,380	28,230	32,610	528
BH04	03/11/2024	4	0.657	83.8	1,960	14,100	2,120	16,060	18,180	2,280
Excavation Floor Soil Samples										
FS01	04/01/2024	5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	896
FS02	04/02/2024	12	<0.050	<0.300	<10.0	18.7	<10.0	18.7	18.7	688
FS03	03/22/2024	4	<0.050	<0.300	<10.0	316	64.1	316	380	896
FS04	04/02/2024	12	<0.050	<0.300	12.0	198	14.9	210	225	1,390
FS05	04/02/2024	12	0.934	54.5	1,280	5,100	705	6,380	7,085	2,000
FS05A	04/09/2024	15	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	3,520
FS06	04/02/2024	12	<0.050	3.90	183	971	157	1,154	1,311	1,390
FS06A	04/09/2024	15	<0.050	1.05	38	531	110	569	679	2,640
FS07	04/02/2024	12	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	928
FS08	04/03/2024	9	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,600
FS09	04/03/2024	9	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,660
FS10	04/03/2024	9	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,880

**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 SEMU Permian 127 Flowline Release  
 Maverick Permian, LLC  
 Lea County, New Mexico

Sample Designation	Sample 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
NMOCD Reclamation Requirement for the top four feet			NE	NE	NE	NE	NE	NE	100	600
FS11	04/03/2024	8	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,280
FS12	04/03/2024	9	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,070
FS13	04/03/2024	8	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,120
FS14	04/03/2024	6	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	960
FS15	04/04/2024	8	<0.050	<0.300	<10.0	312	62.5	312	375	560
FS16	04/04/2024	8	<0.050	<0.300	<10.0	176	32.9	176	209	832
FS17	04/04/2024	6	<0.050	<0.300	<10.0	37.8	<10.0	37.8	37.8	592
FS18	04/04/2024	6	<0.050	<0.300	<10.0	113	20.0	113	133	320
FS19	04/04/2024	5	<0.050	<0.300	<10.0	28.1	<10.0	28.1	28.1	224
FS20	04/04/2024	5	<0.050	<0.300	<10.0	38.4	<10.0	38.4	38.4	240
FS21	04/04/2024	8	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,680
FS22	04/09/2024	13	<0.050	<0.300	<10.0	28.2	<10.0	28.2	28.2	3,320
FS23	04/09/2024	13	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,520
FS24	04/09/2024	13	<0.050	<0.300	<10.0	42.2	<10.0	42.2	42.2	1,960
FS25	04/09/2024	13	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,720
FS26	04/09/2024	13	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,640
FS27	04/09/2024	8	<0.050	<0.300	<10.0	46.7	<10.0	46.7	46.7	992
FS28	04/09/2024	8	<0.050	<0.300	<10.0	169	37.8	169	207	816
FS29	04/10/2024	4	<0.050	<0.300	<10.0	105	12.4	105	117	896
Excavation Sidewall Soil Samples										
SW01*	3/27/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SW01	4/8/2024	4-8	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	560
SW01	4/8/2024	8-12	<0.050	<0.300	<10.0	85.2	<10.0	85.2	85.2	1,260
SW02*	3/27/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
SW02	4/8/2024	4-8	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SW02	4/8/2024	8-12	<0.050	4.90	208	2,860	433	3,068	3,501	160
SW02	4/15/2024	8-15	<0.050	<0.300	<10.0	88.6	<10.0	88.6	88.6	560

**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
SEMU Permian 127 Flowline Release  
Maverick Permian, LLC  
Lea County, New Mexico

Sample Designation	Sample 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
NMOCD Reclamation Requirement for the top four feet			NE	NE	NE	NE	NE	NE	100	600
SW03*	3/27/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	912
SW03*	4/8/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SW03	4/8/2024	4-9	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	832
SW04*	3/27/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
SW04	4/8/2024	4-9	0.102	27.0	1,070	4,490	760	5,560	6,320	576
SW04	4/15/2024	4-9	<0.050	<0.300	<10.0	14.0	<10.0	14.0	14.0	816
SW05*	3/27/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	480
SW05	4/8/2024	4-8	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,140
SW06*	4/10/2024	0-5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
Backfill Soil Sample										
BF01	4/8/2024	-	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0

**Notes:**

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code

NA: Not Analyzed

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

**Grey** text represents samples that have been excavated

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


Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.



## APPENDIX A

### Referenced Well Records

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 <b>ENSOLUM</b>								Sample Name: DTW-01		Date: 03/06/2024	
								Site Name: Grayburg Eumont Strawn Battery			
								Incident Number: nAPP2302036818			
								Job Number: 03E2057063			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								Logged By: Chad Hamilton		Method: Air Rotary	
Coordinates: 32.546323, -103.205162								Hole Diameter: 6"		Total Depth: 55'	
Comments: No field screening or sampling was conducted at this site.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
D					0	0	SW	0-10' Sand: yellow to tan, fine to very fine grain size, dry, non-plastic, non-cohesive, massive uniform			
D					10	10	SW	10-20' Sand: yellow to tan, fine to very fine grain size, dry, non-plastic, non-cohesive, massive uniform			
D					20	20	SW	20-30' Sand: yellow to tan, fine to very fine grain size, dry, non-plastic, non-cohesive, massive uniform			
D					30	30	SW	30-35' Sand: yellow to tan, fine to very fine grain size, dry, non-plastic, non-cohesive, massive uniform			
D					40	40	SC	35-40' Sand: interbedded white and brown to light brown, fine to very fine grain size, dry, non-plastic, non-cohesive, massive, uniform,			
							SC	40-45' Sand: Red to light brown, med to fine, moist, non-plastic, non-cohesive, massive, uniform, gradational			
M					50	50	SC	45-53' Clayey sand: White, fine to very fine, moist, non-plastic, non-cohesive, massive, uniform, abrupt			
M					55	55	CCHE	53' Caliche: White to yellow, thickly bedded, abrupt			
							SC	54-55' Sand: Light brown, med to fine, some clay, moist, non-plastic, non-cohesive, massive, uniform ,abrupt, No water encountered			
Total Depth @ 55' bgs.											



## APPENDIX B

### Photographic Log

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## Photographic Log

Maverick Permian, LLC  
SEMU Permian 127 Flowline Release  
Incident Number nAPP2331056887



Photograph 1  
Description: Release area  
View: Southwest

Date: 11/08/2023



Photograph 2  
Description: Excavation Activities  
View: Northwest

Date: 04/04/2024



Photograph 3  
Description: Excavation activities  
View: Northeast

Date: 04/10/2024



Photograph 4  
Description: Final excavation extent  
View: West

Date: 04/15/2024



# Photographic Log

Maverick Permian, LLC

SEMU Permian 127 Flowline Release

Incident Number nAPP2331056887



Photograph 5 Date: 04/18/2024  
Description: Backfilling activities  
View: West



Photograph 6 Date: 04/22/2024  
Description: Backfilled excavation  
View: Southwest



Photograph 7 Date: 04/23/2024  
Description: Backfilled and seeded  
View: East



Photograph 8 Date: 04/23/2024  
Description: Backfilled and seeded  
View: Northwest



## APPENDIX C

### Laboratory Analytical Reports & Chain of Custody Documentation

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

March 14, 2024

AIMEE COLE

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 03/11/24 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: BH 01 1' (H241225-01)**

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.802</b>	0.500	03/13/2024	ND	2.31	116	2.00	2.82	
<b>Toluene*</b>	<b>8.52</b>	0.500	03/13/2024	ND	2.17	109	2.00	2.69	
<b>Ethylbenzene*</b>	<b>20.8</b>	0.500	03/13/2024	ND	2.19	110	2.00	3.24	
<b>Total Xylenes*</b>	<b>49.8</b>	1.50	03/13/2024	ND	6.55	109	6.00	3.85	
<b>Total BTEX</b>	<b>79.9</b>	3.00	03/13/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 154 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>512</b>	16.0	03/13/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>2480</b>	100	03/12/2024	ND	217	108	200	7.34	
<b>DRO &gt;C10-C28*</b>	<b>40300</b>	100	03/12/2024	ND	199	99.7	200	3.24	
<b>EXT DRO &gt;C28-C36</b>	<b>10100</b>	100	03/12/2024	ND					

Surrogate: 1-Chlorooctane 194 % 48.2-134

Surrogate: 1-Chlorooctadecane 783 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: BH 01 4' (H241225-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	1.58	1.00	03/13/2024	ND	2.31	116	2.00	2.82		
Toluene*	7.50	1.00	03/13/2024	ND	2.17	109	2.00	2.69		
Ethylbenzene*	27.4	1.00	03/13/2024	ND	2.19	110	2.00	3.24		
Total Xylenes*	64.2	3.00	03/13/2024	ND	6.55	109	6.00	3.85		
Total BTEX	101	6.00	03/13/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 124 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>688</b>	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	2740	100	03/12/2024	ND	217	108	200	7.34	
DRO >C10-C28*	30200	100	03/12/2024	ND	199	99.7	200	3.24	
EXT DRO >C28-C36	7120	100	03/12/2024	ND					

Surrogate: 1-Chlorooctane 201 % 48.2-134

Surrogate: 1-Chlorooctadecane 544 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: BH 02 1' (H241225-03)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2024	ND	2.31	116	2.00	2.82	
Toluene*	<0.050	0.050	03/13/2024	ND	2.17	109	2.00	2.69	
Ethylbenzene*	<0.050	0.050	03/13/2024	ND	2.19	110	2.00	3.24	
Total Xylenes*	<0.150	0.150	03/13/2024	ND	6.55	109	6.00	3.85	
Total BTEX	<0.300	0.300	03/13/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	416	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	12.1	10.0	03/13/2024	ND	217	108	200	7.34	
DRO >C10-C28*	1410	10.0	03/13/2024	ND	199	99.7	200	3.24	
EXT DRO >C28-C36	331	10.0	03/13/2024	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: BH 02 4' (H241225-04)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/13/2024	ND	2.31	116	2.00	2.82		
Toluene*	<0.050	0.050	03/13/2024	ND	2.17	109	2.00	2.69		
Ethylbenzene*	<0.050	0.050	03/13/2024	ND	2.19	110	2.00	3.24		
Total Xylenes*	<0.150	0.150	03/13/2024	ND	6.55	109	6.00	3.85		
Total BTEX	<0.300	0.300	03/13/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1600	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/13/2024	ND	217	108	200	7.34	
DRO >C10-C28*	849	10.0	03/13/2024	ND	199	99.7	200	3.24	
EXT DRO >C28-C36	213	10.0	03/13/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 141 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: BH 03 2' (H241225-05)**

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2024	ND	2.31	116	2.00	2.82	
Toluene*	<b>0.247</b>	0.050	03/13/2024	ND	2.17	109	2.00	2.69	
Ethylbenzene*	<b>0.490</b>	0.050	03/13/2024	ND	2.19	110	2.00	3.24	
Total Xylenes*	<b>6.15</b>	0.150	03/13/2024	ND	6.55	109	6.00	3.85	
Total BTEX	<b>6.89</b>	0.300	03/13/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 177 % 71.5-134

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>208</b>	16.0	03/13/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<b>788</b>	100	03/12/2024	ND	217	108	200	7.34	
DRO >C10-C28*	<b>37700</b>	100	03/12/2024	ND	199	99.7	200	3.24	
EXT DRO >C28-C36	<b>8290</b>	100	03/12/2024	ND					

Surrogate: 1-Chlorooctane 300 % 48.2-134

Surrogate: 1-Chlorooctadecane 625 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: BH 03 4' (H241225-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/13/2024	ND	2.31	116	2.00	2.82		
Toluene*	<0.050	0.050	03/13/2024	ND	2.17	109	2.00	2.69		
Ethylbenzene*	<0.050	0.050	03/13/2024	ND	2.19	110	2.00	3.24		
<b>Total Xylenes*</b>	<b>0.190</b>	0.150	03/13/2024	ND	6.55	109	6.00	3.85		
Total BTEX	<0.300	0.300	03/13/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 130 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>704</b>	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	03/12/2024	ND	217	108	200	7.34	
DRO >C10-C28*	4170	50.0	03/12/2024	ND	199	99.7	200	3.24	
EXT DRO >C28-C36	951	50.0	03/12/2024	ND					

Surrogate: 1-Chlorooctane 149 % 48.2-134

Surrogate: 1-Chlorooctadecane 198 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: BH 04 2' (H241225-07)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	2.61	1.00	03/13/2024	ND	2.31	116	2.00	2.82	
Toluene*	27.5	1.00	03/13/2024	ND	2.17	109	2.00	2.69	
Ethylbenzene*	29.2	1.00	03/13/2024	ND	2.19	110	2.00	3.24	
Total Xylenes*	73.6	3.00	03/13/2024	ND	6.55	109	6.00	3.85	
Total BTEX	133	6.00	03/13/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 130 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	528	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M	mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	2730	100	03/12/2024	ND	203	101	200	1.75	
DRO >C10-C28*	25500	100	03/12/2024	ND	190	94.8	200	0.820	
EXT DRO >C28-C36	4380	100	03/12/2024	ND					

Surrogate: 1-Chlorooctane 229 % 48.2-134

Surrogate: 1-Chlorooctadecane 555 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: BH 04 4' (H241225-08)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	0.657	0.500	03/13/2024	ND	2.31	116	2.00	2.82		
Toluene*	9.01	0.500	03/13/2024	ND	2.17	109	2.00	2.69		
Ethylbenzene*	21.1	0.500	03/13/2024	ND	2.19	110	2.00	3.24		
Total Xylenes*	53.0	1.50	03/13/2024	ND	6.55	109	6.00	3.85		
Total BTEX	83.8	3.00	03/13/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>2280</b>	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	1960	100	03/12/2024	ND	210	105	200	5.21		
DRO >C10-C28*	14100	100	03/12/2024	ND	198	98.9	200	4.25		
EXT DRO >C28-C36	2120	100	03/12/2024	ND						

Surrogate: 1-Chlorooctane 542 % 48.2-134

Surrogate: 1-Chlorooctadecane 678 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: SS 01 0.5' (H241225-09)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/12/2024	ND	2.31	116	2.00	2.82	
Toluene*	<0.050	0.050	03/12/2024	ND	2.17	109	2.00	2.69	
Ethylbenzene*	<0.050	0.050	03/12/2024	ND	2.19	110	2.00	3.24	
Total Xylenes*	<0.150	0.150	03/12/2024	ND	6.55	109	6.00	3.85	
Total BTEX	<0.300	0.300	03/12/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2024	ND	210	105	200	5.21	
DRO >C10-C28*	<10.0	10.0	03/12/2024	ND	198	98.9	200	4.25	
EXT DRO >C28-C36	<10.0	10.0	03/12/2024	ND					

Surrogate: 1-Chlorooctane 133 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: SS 02 0.8' (H241225-10)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/12/2024	ND	2.31	116	2.00	2.82		
Toluene*	<0.050	0.050	03/12/2024	ND	2.17	109	2.00	2.69		
Ethylbenzene*	<0.050	0.050	03/12/2024	ND	2.19	110	2.00	3.24		
Total Xylenes*	<0.150	0.150	03/12/2024	ND	6.55	109	6.00	3.85		
Total BTX	<0.300	0.300	03/12/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	03/13/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2024	ND	210	105	200	5.21	
DRO >C10-C28*	<10.0	10.0	03/12/2024	ND	198	98.9	200	4.25	
EXT DRO >C28-C36	<10.0	10.0	03/12/2024	ND					

Surrogate: 1-Chlorooctane 118 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: SS 03 0.5' (H241225-11)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/12/2024	ND	2.31	116	2.00	2.82		
Toluene*	<0.050	0.050	03/12/2024	ND	2.17	109	2.00	2.69		
Ethylbenzene*	<0.050	0.050	03/12/2024	ND	2.19	110	2.00	3.24		
Total Xylenes*	<0.150	0.150	03/12/2024	ND	6.55	109	6.00	3.85		
Total BTEX	<0.300	0.300	03/12/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	03/13/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2024	ND	210	105	200	5.21	
DRO >C10-C28*	<10.0	10.0	03/12/2024	ND	198	98.9	200	4.25	
EXT DRO >C28-C36	<10.0	10.0	03/12/2024	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: SS 04 0.5' (H241225-12)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/12/2024	ND	2.31	116	2.00	2.82		
Toluene*	<0.050	0.050	03/12/2024	ND	2.17	109	2.00	2.69		
Ethylbenzene*	<0.050	0.050	03/12/2024	ND	2.19	110	2.00	3.24		
Total Xylenes*	<0.150	0.150	03/12/2024	ND	6.55	109	6.00	3.85		
Total BTEx	<0.300	0.300	03/12/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2024	ND	210	105	200	5.21	
DRO >C10-C28*	<10.0	10.0	03/12/2024	ND	198	98.9	200	4.25	
EXT DRO >C28-C36	<10.0	10.0	03/12/2024	ND					

Surrogate: 1-Chlorooctane 126 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 AIMEE COLE  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received:	03/11/2024	Sampling Date:	03/11/2024
Reported:	03/14/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK		

**Sample ID: SS 05 0.5' (H241225-13)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/12/2024	ND	2.31	116	2.00	2.82		
Toluene*	<0.050	0.050	03/12/2024	ND	2.17	109	2.00	2.69		
Ethylbenzene*	<0.050	0.050	03/12/2024	ND	2.19	110	2.00	3.24		
Total Xylenes*	<0.150	0.150	03/12/2024	ND	6.55	109	6.00	3.85		
Total BTEx	<0.300	0.300	03/12/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	03/13/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2024	ND	210	105	200	5.21	
DRO >C10-C28*	<10.0	10.0	03/12/2024	ND	198	98.9	200	4.25	
EXT DRO >C28-C36	<10.0	10.0	03/12/2024	ND					

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager





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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Engstrom, LLC					
Project Manager: Alwer Care					
Address: 601 N. Mandentel St. Ste. 480					
City: Midland State: TX Zip: 79701					
Phone #: 720-384-7365 Fax #:					
Project #: 03E 2057104 Project Owner: Mowatt					
Project Name: SEM Permi 127 Etchline Phase					
Project Location:					
Sampler Name: Noah Baker					
FOR LAB USE ONLY					
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.	
				# CONTAINERS	
				GROUNDWATER	
				WASTEWATER	
				SOIL	
				OIL	
				SLUDGE	
				OTHER :	
				ACID/BASE:	
				ICE / COOL	
				OTHER :	
				DATE	
				TIME	
				TPH 8015	
				BTEX 80216	
				Chlorides 4500	





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

April 03, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 03/27/24 14:14.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	03/27/2024	Sampling Date:	03/27/2024
Reported:	04/03/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 01 0-4 (H241601-01)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/29/2024	ND	2.07	104	2.00	5.54	
Toluene*	<0.050	0.050	03/29/2024	ND	2.08	104	2.00	8.46	
Ethylbenzene*	<0.050	0.050	03/29/2024	ND	2.14	107	2.00	9.40	
Total Xylenes*	<0.150	0.150	03/29/2024	ND	6.34	106	6.00	9.31	
Total BTEX	<0.300	0.300	03/29/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	04/01/2024	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/28/2024	ND	206	103	200	1.19	
DRO >C10-C28*	<10.0	10.0	03/28/2024	ND	195	97.5	200	1.42	
EXT DRO >C28-C36	<10.0	10.0	03/28/2024	ND					

Surrogate: 1-Chlorooctane 78.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 71.7 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	03/27/2024	Sampling Date:	03/27/2024
Reported:	04/03/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 03 0-4 (H241601-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2024	ND	2.07	104	2.00	5.54		
Toluene*	<0.050	0.050	03/29/2024	ND	2.08	104	2.00	8.46		
Ethylbenzene*	<0.050	0.050	03/29/2024	ND	2.14	107	2.00	9.40		
Total Xylenes*	<0.150	0.150	03/29/2024	ND	6.34	106	6.00	9.31		
Total BTEX	<0.300	0.300	03/29/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	912	16.0	04/01/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/28/2024	ND	206	103	200	1.19	
DRO >C10-C28*	<10.0	10.0	03/28/2024	ND	195	97.5	200	1.42	
EXT DRO >C28-C36	<10.0	10.0	03/28/2024	ND					

Surrogate: 1-Chlorooctane 91.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.5 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	03/27/2024	Sampling Date:	03/27/2024
Reported:	04/03/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 05 0-4 (H241601-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2024	ND	2.07	104	2.00	5.54		
Toluene*	<0.050	0.050	03/29/2024	ND	2.08	104	2.00	8.46		
Ethylbenzene*	<0.050	0.050	03/29/2024	ND	2.14	107	2.00	9.40		
Total Xylenes*	<0.150	0.150	03/29/2024	ND	6.34	106	6.00	9.31		
Total BTEX	<0.300	0.300	03/29/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	04/01/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	03/28/2024	ND	206	103	200	1.19		
DRO >C10-C28*	<10.0	10.0	03/28/2024	ND	195	97.5	200	1.42		
EXT DRO >C28-C36	<10.0	10.0	03/28/2024	ND						

Surrogate: 1-Chlorooctane 95.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	03/27/2024	Sampling Date:	03/27/2024
Reported:	04/03/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 02 0-4 (H241601-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2024	ND	2.07	104	2.00	5.54		
Toluene*	<0.050	0.050	03/29/2024	ND	2.08	104	2.00	8.46		
Ethylbenzene*	<0.050	0.050	03/29/2024	ND	2.14	107	2.00	9.40		
Total Xylenes*	<0.150	0.150	03/29/2024	ND	6.34	106	6.00	9.31		
Total BTEX	<0.300	0.300	03/29/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	04/01/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/28/2024	ND	206	103	200	1.19	
DRO >C10-C28*	<10.0	10.0	03/28/2024	ND	195	97.5	200	1.42	
EXT DRO >C28-C36	<10.0	10.0	03/28/2024	ND					

Surrogate: 1-Chlorooctane 87.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.4 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	03/27/2024	Sampling Date:	03/27/2024
Reported:	04/03/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 04 0-4 (H241601-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/29/2024	ND	2.07	104	2.00	5.54		
Toluene*	<0.050	0.050	03/29/2024	ND	2.08	104	2.00	8.46		
Ethylbenzene*	<0.050	0.050	03/29/2024	ND	2.14	107	2.00	9.40		
Total Xylenes*	<0.150	0.150	03/29/2024	ND	6.34	106	6.00	9.31		
Total BTEX	<0.300	0.300	03/29/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	04/01/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/28/2024	ND	206	103	200	1.19	
DRO >C10-C28*	<10.0	10.0	03/28/2024	ND	195	97.5	200	1.42	
EXT DRO >C28-C36	<10.0	10.0	03/28/2024	ND					

Surrogate: 1-Chlorooctane 158 % 48.2-134

Surrogate: 1-Chlorooctadecane 142 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



---

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### Notes and Definitions

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

---

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

Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

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April 05, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/01/24 14:37.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/01/2024	Sampling Date:	04/01/2024
Reported:	04/05/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS01 5' (H241670-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/03/2024	ND	2.02	101	2.00	8.02	
Toluene*	<0.050	0.050	04/03/2024	ND	2.12	106	2.00	6.89	
Ethylbenzene*	<0.050	0.050	04/03/2024	ND	2.17	109	2.00	9.23	
Total Xylenes*	<0.150	0.150	04/03/2024	ND	6.80	113	6.00	12.3	
Total BTX	<0.300	0.300	04/03/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	896	16.0	04/03/2024	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/03/2024	ND	195	97.7	200	2.11	
DRO >C10-C28*	<10.0	10.0	04/03/2024	ND	191	95.7	200	3.80	
EXT DRO >C28-C36	<10.0	10.0	04/03/2024	ND					

Surrogate: 1-Chlorooctane 94.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.4 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

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

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### Notes and Definitions

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

---

Cardinal Laboratories

\*=Accredited Analyte

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

---

Celey D. Keene, Lab Director/Quality Manager





CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Ensolum, LLC

Project Manager: Aimee Cole

Address: 3122 National Parks Hwy

City: Carlsbad

State: NM Zip: 88220

Phone #: (720) 384-7365

Fax #:

Project #: 03E2057104

Project Owner:

Project Name: SE-MV Permian 187 Flowline Release

Project Location: 38.5445, -103.1491

Sampler Name: Mario Sarrats

Fax #:

BILL TO

ANALYSIS REQUEST

P.O. #:

Company: EN SoluM, LLC

Attn: acole@ensolum.com

Address: 3122 National Parks Hwy

City: Carlsbad

State: NM Zip: 88220

Phone #: 720-384-7365

Fax #:

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

Depth (feet)

H241670

ES01

5'

G

1

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER :  
ACID/BASE:  
ICE / COOL  
OTHER :

4/1/24

11:32

BTEX  
TPH  
CI-

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Relinquished By:

Date: 4/1/24

Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

Relinquished By:

Date: 4/1/24

Received By:

REMARKS: acole@ensolum.com / msarrats@ensolum.com

Delivered By: (Circle One)

Observed Temp.: 3.4

Sample Condition

CHECKED BY: (Initials)

Turnaround Time:

Standard

☒

Bacteria (only)

Sample Condition

Sampler - UPS - Bus - Other:

Corrected Temp.: °C

Cool Intact

Yes ☒ No ☐

Thermometer ID

#140

☐

Cool Intact

Observed Temp.: °C

FORM-006 R-5.2 (10/07/21)

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



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

April 08, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/02/24 13:26.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/02/2024	Sampling Date:	04/02/2024
Reported:	04/08/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 02 12' (H241699-01)**

BTX 8021B			mg/kg		Analyzed By: JH				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/04/2024	ND	2.10	105	2.00	9.62	
Toluene*	<0.050	0.050	04/04/2024	ND	2.06	103	2.00	8.90	
Ethylbenzene*	<0.050	0.050	04/04/2024	ND	2.13	107	2.00	8.00	
Total Xylenes*	<0.150	0.150	04/04/2024	ND	6.36	106	6.00	7.46	
Total BTX	<0.300	0.300	04/04/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	688	16.0	04/05/2024	ND	416	104	400	3.77	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/05/2024	ND	224	112	200	0.679	
DRO >C10-C28*	18.7	10.0	04/05/2024	ND	220	110	200	0.145	
EXT DRO >C28-C36	<10.0	10.0	04/05/2024	ND					

Surrogate: 1-Chlorooctane 92.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.5 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/02/2024	Sampling Date:	04/02/2024
Reported:	04/08/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 04 12' (H241699-02)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/04/2024	ND	2.10	105	2.00	9.62		
Toluene*	<0.050	0.050	04/04/2024	ND	2.06	103	2.00	8.90		
Ethylbenzene*	<0.050	0.050	04/04/2024	ND	2.13	107	2.00	8.00		
<b>Total Xylenes*</b>	<b>0.172</b>	0.150	04/04/2024	ND	6.36	106	6.00	7.46		
Total BTEX	<0.300	0.300	04/04/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1390</b>	16.0	04/05/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	12.0	10.0	04/05/2024	ND	224	112	200	0.679	
DRO >C10-C28*	198	10.0	04/05/2024	ND	220	110	200	0.145	
EXT DRO >C28-C36	14.9	10.0	04/05/2024	ND					

Surrogate: 1-Chlorooctane 95.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.0 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/02/2024	Sampling Date:	04/02/2024
Reported:	04/08/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 05 12' (H241699-03)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.934</b>	0.100	04/05/2024	ND	2.10	105	2.00	9.62	
<b>Toluene*</b>	<b>2.99</b>	0.100	04/05/2024	ND	2.06	103	2.00	8.90	GC-NC1
<b>Ethylbenzene*</b>	<b>15.1</b>	0.100	04/05/2024	ND	2.13	107	2.00	8.00	
<b>Total Xylenes*</b>	<b>35.4</b>	0.300	04/05/2024	ND	6.36	106	6.00	7.46	
<b>Total BTEX</b>	<b>54.5</b>	0.600	04/05/2024	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>2000</b>	16.0	04/05/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>1280</b>	100	04/04/2024	ND	224	112	200	0.679	
<b>DRO &gt;C10-C28*</b>	<b>5100</b>	100	04/04/2024	ND	220	110	200	0.145	
<b>EXT DRO &gt;C28-C36</b>	<b>705</b>	100	04/04/2024	ND					

Surrogate: 1-Chlorooctane 130 % 48.2-134

Surrogate: 1-Chlorooctadecane 131 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/02/2024	Sampling Date:	04/02/2024
Reported:	04/08/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 06 12' (H241699-04)**

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/04/2024	ND	2.10	105	2.00	9.62	
<b>Toluene*</b>	<b>0.118</b>	0.050	04/04/2024	ND	2.06	103	2.00	8.90	GC-NC1
<b>Ethylbenzene*</b>	<b>1.00</b>	0.050	04/04/2024	ND	2.13	107	2.00	8.00	
<b>Total Xylenes*</b>	<b>2.78</b>	0.150	04/04/2024	ND	6.36	106	6.00	7.46	
<b>Total BTEX</b>	<b>3.90</b>	0.300	04/04/2024	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 150 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>1390</b>	16.0	04/05/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>183</b>	10.0	04/05/2024	ND	224	112	200	0.679	
<b>DRO &gt;C10-C28*</b>	<b>971</b>	10.0	04/05/2024	ND	220	110	200	0.145	
<b>EXT DRO &gt;C28-C36</b>	<b>157</b>	10.0	04/05/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.2 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/02/2024	Sampling Date:	04/02/2024
Reported:	04/08/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 07 12' (H241699-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/04/2024	ND	2.10	105	2.00	9.62		
Toluene*	<0.050	0.050	04/04/2024	ND	2.06	103	2.00	8.90		
Ethylbenzene*	<0.050	0.050	04/04/2024	ND	2.13	107	2.00	8.00		
Total Xylenes*	<0.150	0.150	04/04/2024	ND	6.36	106	6.00	7.46		
Total BTEX	<0.300	0.300	04/04/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	928	16.0	04/05/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2024	ND	224	112	200	0.679	
DRO >C10-C28*	<10.0	10.0	04/04/2024	ND	220	110	200	0.145	
EXT DRO >C28-C36	<10.0	10.0	04/04/2024	ND					

Surrogate: 1-Chlorooctane 95.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
GC-NC1	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Ensolum, LLC

Project Manager: Aimee Cole

Address: 3122 National Parks Hwy

City: Carlsbad

State: NM Zip: 88220

Phone #: (720) 384-7365

Fax #:

Project #: 03E2057104

Project Owner: Maverick

Project Name: SE MUPerman 127 Fluorine Release

Project Location: 32.5445, -103.1491

Sampler Name: Mario Sarrbbs

BILL TO

ANALYSIS REQUEST

P.O. #:

Company: Ensolum, LLC

Attn: Aimee Cole

Address:

City:

State: Zip:

Phone #:

Fax #:

FOR LAB USE ONLY

FOR LAB USE ONLY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	SAMPLING																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX	TPH	Chlorides																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

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Relinquished By:

Received By:

Date: 4/2/24

Time: 13:30

Relinquished By:

Received By:

Date:

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Observed Temp. °C

Corrected Temp. °C

Sample Condition

Cool Intact

Yes Yes

No No

CHECKED BY:

(Initials)

88

Turnaround Time:

Standard Rush

#140

Standard

Bacteria (only)

Sample Condition

Cool Intact

Observed Temp. °C

Corrected Temp. °C

Turnaround Time:

Standard Rush

#140

Standard

Bacteria (only)

Sample Condition

Cool Intact

Observed Temp. °C

Corrected Temp. °C

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

REMARKS: acole@ensolum.com/msarrbbs@ensolum.com

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



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

April 09, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/03/24 14:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Coley D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/03/2024	Sampling Date:	04/03/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 08 9' (H241731-01)**

BTEx 8021B			mg/kg		Analyzed By: JH				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2024	ND	2.12	106	2.00	5.16	
Toluene*	<0.050	0.050	04/05/2024	ND	2.15	107	2.00	6.07	
Ethylbenzene*	<0.050	0.050	04/05/2024	ND	2.09	104	2.00	6.24	
Total Xylenes*	<0.150	0.150	04/05/2024	ND	6.31	105	6.00	5.35	
Total BTEX	<0.300	0.300	04/05/2024	ND					

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

Chloride, SM4500Cl-B			mg/kg		Analyzed By: CT				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1600	16.0	04/08/2024	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2024	ND	200	100	200	3.52	
DRO >C10-C28*	<10.0	10.0	04/04/2024	ND	195	97.7	200	2.25	
EXT DRO >C28-C36	<10.0	10.0	04/04/2024	ND					

Surrogate: 1-Chlorooctane 99.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.2 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/03/2024	Sampling Date:	04/03/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 09 9' (H241731-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/05/2024	ND	2.12	106	2.00	5.16		
Toluene*	<0.050	0.050	04/05/2024	ND	2.15	107	2.00	6.07		
Ethylbenzene*	<0.050	0.050	04/05/2024	ND	2.09	104	2.00	6.24		
Total Xylenes*	<0.150	0.150	04/05/2024	ND	6.31	105	6.00	5.35		
Total BTEX	<0.300	0.300	04/05/2024	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1660	16.0	04/08/2024	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2024	ND	200	100	200	3.52	
DRO >C10-C28*	<10.0	10.0	04/04/2024	ND	195	97.7	200	2.25	
EXT DRO >C28-C36	<10.0	10.0	04/04/2024	ND					

Surrogate: 1-Chlorooctane 90.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.5 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/03/2024	Sampling Date:	04/03/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 10 9' (H241731-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/05/2024	ND	2.12	106	2.00	5.16		
Toluene*	<0.050	0.050	04/05/2024	ND	2.15	107	2.00	6.07		
Ethylbenzene*	<0.050	0.050	04/05/2024	ND	2.09	104	2.00	6.24		
Total Xylenes*	<0.150	0.150	04/05/2024	ND	6.31	105	6.00	5.35		
Total BTEX	<0.300	0.300	04/05/2024	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1880	16.0	04/08/2024	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2024	ND	200	100	200	3.52	
DRO >C10-C28*	<10.0	10.0	04/04/2024	ND	195	97.7	200	2.25	
EXT DRO >C28-C36	<10.0	10.0	04/04/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.0 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/03/2024	Sampling Date:	04/03/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 11 8' (H241731-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/05/2024	ND	2.12	106	2.00	5.16		
Toluene*	<0.050	0.050	04/05/2024	ND	2.15	107	2.00	6.07		
Ethylbenzene*	<0.050	0.050	04/05/2024	ND	2.09	104	2.00	6.24		
Total Xylenes*	<0.150	0.150	04/05/2024	ND	6.31	105	6.00	5.35		
Total BTEX	<0.300	0.300	04/05/2024	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1280	16.0	04/08/2024	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2024	ND	200	100	200	3.52	
DRO >C10-C28*	<10.0	10.0	04/04/2024	ND	195	97.7	200	2.25	
EXT DRO >C28-C36	<10.0	10.0	04/04/2024	ND					

Surrogate: 1-Chlorooctane 89.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.2 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/03/2024	Sampling Date:	04/03/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 13 8' (H241731-05)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2024	ND	2.12	106	2.00	5.16	
Toluene*	<0.050	0.050	04/05/2024	ND	2.15	107	2.00	6.07	
Ethylbenzene*	<0.050	0.050	04/05/2024	ND	2.09	104	2.00	6.24	
Total Xylenes*	<0.150	0.150	04/05/2024	ND	6.31	105	6.00	5.35	
Total BTEX	<0.300	0.300	04/05/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1120	16.0	04/08/2024	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2024	ND	204	102	200	0.693	
DRO >C10-C28*	<10.0	10.0	04/04/2024	ND	217	109	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	04/04/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/03/2024	Sampling Date:	04/03/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 12 9' (H241731-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/05/2024	ND	2.12	106	2.00	5.16		
Toluene*	<0.050	0.050	04/05/2024	ND	2.15	107	2.00	6.07		
Ethylbenzene*	<0.050	0.050	04/05/2024	ND	2.09	104	2.00	6.24		
Total Xylenes*	<0.150	0.150	04/05/2024	ND	6.31	105	6.00	5.35		
Total BTEX	<0.300	0.300	04/05/2024	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1070	16.0	04/08/2024	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2024	ND	204	102	200	0.693	
DRO >C10-C28*	<10.0	10.0	04/04/2024	ND	217	109	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	04/04/2024	ND					

Surrogate: 1-Chlorooctane 79.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/03/2024	Sampling Date:	04/03/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 14 6' (H241731-07)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/05/2024	ND	2.12	106	2.00	5.16		
Toluene*	<0.050	0.050	04/05/2024	ND	2.15	107	2.00	6.07		
Ethylbenzene*	<0.050	0.050	04/05/2024	ND	2.09	104	2.00	6.24		
Total Xylenes*	<0.150	0.150	04/05/2024	ND	6.31	105	6.00	5.35		
Total BTX	<0.300	0.300	04/05/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	960	16.0	04/08/2024	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/04/2024	ND	204	102	200	0.693	
DRO >C10-C28*	<10.0	10.0	04/04/2024	ND	217	109	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	04/04/2024	ND					

Surrogate: 1-Chlorooctane 94.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

**Company Name:** Ensolum, LLC

**Project Manager:** Aimee Cole

**Address:** 3122 National Parks Hwy

**City:** Carlsbad

**Phone #:** (720) 384-7365

**Project #:** 03E2057104

**Project Name:** SEMU Perma 127 Flowline Release

**Project Location:** 32.5495, -103.1441

**Sampler Name:** Mario Sacchi's

**State:** NM

**Zip:** 88220

**Project Owner:**

**City:** Carlsbad

**State:** NM

**Zip:** 88220

**Phone #:** 720-384-7365

**Fax #:**

**FOR LAB USE ONLY**

**Lab I.D.**

**Sample I.D.**

**Depth (feet)**

**(G)RAB OR (C)OMP.**

**# CONTAINERS**

**GROUNDWATER**

**WASTEWATER**

**SOIL**

**OIL**

**SLUDGE**

**OTHER :**

**ACID/BASE:**

**ICE / COOL**

**OTHER :**

**DATE**

**TIME**

**P.O. #:**

**Company:** Ensolum, LLC

**Attn:** Aimee Cole

**Address:** 3122 National Parks Hwy

**City:** Carlsbad

**State:** NM

**Zip:** 88220

**Phone #:** 720-384-7365

**Fax #:**

**Matrix**

**Preserv**

**Sampling**

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEx	TPH	CI-
1041731	FS08	9'	C	1			✓					✓		4/3/24	1035	✓	✓	✓
2	FS09	9'	C	1			✓					✓		4/3/24	1036	✓	✓	✓
3	FS10	9'	C	1			✓					✓		4/3/24	1039	✓	✓	✓
4	FS11	8'	C	1			✓					✓		4/3/24	1041	✓	✓	✓
5	FS13	8'	C	1			✓					✓		4/3/24	1048	✓	✓	✓
6	FS1a	9'	C	1			✓					✓		4/3/24	13a3	✓	✓	✓
7	FS14	6'	C	1			✓					✓		4/3/24	1330	✓	✓	✓

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**Relinquished By:**

**Date:** 4/3/24

**Time:** 14:50

**Date:**

**Time:**

**Received By:**

**Date:**

**Time:**

**Turnaround Time:** Standard ☒ Rush ☐

**Thermometer ID #:** 1140 **#140**

**Correction Factor:** 0.5°C

**Observed Temp. °C:** 5.7

**Corrected Temp. °C:**

**Sample Condition:** Cool ☒ Intact ☒

**Checked By:** (Initials) *AE*

**Remarks:**

**Verbal Result:** ☐ Yes ☐ No ☐ Add'l Phone #:

**All Results are emailed. Please provide Email address:**

**Remarks:**



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

April 09, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/04/24 15:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/04/2024	Sampling Date:	04/04/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 15 8' (H241769-01)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2024	ND	1.99	99.5	2.00	1.34	
Toluene*	<0.050	0.050	04/09/2024	ND	2.10	105	2.00	3.51	
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.20	110	2.00	5.72	
Total Xylenes*	<0.150	0.150	04/09/2024	ND	6.62	110	6.00	5.85	
Total BTEX	<0.300	0.300	04/09/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	04/09/2024	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2024	ND	185	92.5	200	3.10	
DRO >C10-C28*	312	10.0	04/08/2024	ND	182	90.8	200	1.13	
EXT DRO >C28-C36	62.5	10.0	04/08/2024	ND					

Surrogate: 1-Chlorooctane 82.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.4 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/04/2024	Sampling Date:	04/04/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 16 8' (H241769-02)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/08/2024	ND	1.99	99.5	2.00	1.34		
Toluene*	<0.050	0.050	04/08/2024	ND	2.10	105	2.00	3.51		
Ethylbenzene*	<0.050	0.050	04/08/2024	ND	2.20	110	2.00	5.72		
Total Xylenes*	<0.150	0.150	04/08/2024	ND	6.62	110	6.00	5.85		
Total BTEX	<0.300	0.300	04/08/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	832	16.0	04/09/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2024	ND	185	92.5	200	3.10	
DRO >C10-C28*	176	10.0	04/08/2024	ND	182	90.8	200	1.13	
EXT DRO >C28-C36	32.9	10.0	04/08/2024	ND					

Surrogate: 1-Chlorooctane 82.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.7 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/04/2024	Sampling Date:	04/04/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 17 6' (H241769-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/08/2024	ND	1.99	99.5	2.00	1.34		
Toluene*	<0.050	0.050	04/08/2024	ND	2.10	105	2.00	3.51		
Ethylbenzene*	<0.050	0.050	04/08/2024	ND	2.20	110	2.00	5.72		
Total Xylenes*	<0.150	0.150	04/08/2024	ND	6.62	110	6.00	5.85		
Total BTEX	<0.300	0.300	04/08/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	592	16.0	04/09/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/08/2024	ND	185	92.5	200	3.10		
DRO >C10-C28*	37.8	10.0	04/08/2024	ND	182	90.8	200	1.13		
EXT DRO >C28-C36	<10.0	10.0	04/08/2024	ND						

Surrogate: 1-Chlorooctane 85.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/04/2024	Sampling Date:	04/04/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 19 5' (H241769-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/08/2024	ND	1.99	99.5	2.00	1.34		
Toluene*	<0.050	0.050	04/08/2024	ND	2.10	105	2.00	3.51		
Ethylbenzene*	<0.050	0.050	04/08/2024	ND	2.20	110	2.00	5.72		
Total Xylenes*	<0.150	0.150	04/08/2024	ND	6.62	110	6.00	5.85		
Total BTEx	<0.300	0.300	04/08/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	04/09/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2024	ND	185	92.5	200	3.10	
DRO >C10-C28*	28.1	10.0	04/08/2024	ND	182	90.8	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	04/08/2024	ND					

Surrogate: 1-Chlorooctane 87.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/04/2024	Sampling Date:	04/04/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 20 5' (H241769-05)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/08/2024	ND	1.99	99.5	2.00	1.34		
Toluene*	<0.050	0.050	04/08/2024	ND	2.10	105	2.00	3.51		
Ethylbenzene*	<0.050	0.050	04/08/2024	ND	2.20	110	2.00	5.72		
Total Xylenes*	<0.150	0.150	04/08/2024	ND	6.62	110	6.00	5.85		
Total BTEX	<0.300	0.300	04/08/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	04/09/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2024	ND	185	92.5	200	3.10	
DRO >C10-C28*	38.4	10.0	04/08/2024	ND	182	90.8	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	04/08/2024	ND					

Surrogate: 1-Chlorooctane 79.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/04/2024	Sampling Date:	04/04/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 21 8' (H241769-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/08/2024	ND	1.99	99.5	2.00	1.34		
Toluene*	<0.050	0.050	04/08/2024	ND	2.10	105	2.00	3.51		
Ethylbenzene*	<0.050	0.050	04/08/2024	ND	2.20	110	2.00	5.72		
Total Xylenes*	<0.150	0.150	04/08/2024	ND	6.62	110	6.00	5.85		
Total BTEX	<0.300	0.300	04/08/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1680	16.0	04/09/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/08/2024	ND	185	92.5	200	3.10		
DRO >C10-C28*	<10.0	10.0	04/08/2024	ND	182	90.8	200	1.13		
EXT DRO >C28-C36	<10.0	10.0	04/08/2024	ND						

Surrogate: 1-Chlorooctane 81.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.6 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/04/2024	Sampling Date:	04/04/2024
Reported:	04/09/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 18 6' (H241769-07)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/08/2024	ND	1.99	99.5	2.00	1.34		
Toluene*	<0.050	0.050	04/08/2024	ND	2.10	105	2.00	3.51		
Ethylbenzene*	<0.050	0.050	04/08/2024	ND	2.20	110	2.00	5.72		
Total Xylenes*	<0.150	0.150	04/08/2024	ND	6.62	110	6.00	5.85		
Total BTEX	<0.300	0.300	04/08/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	04/09/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/08/2024	ND	185	92.5	200	3.10	
DRO >C10-C28*	113	10.0	04/08/2024	ND	182	90.8	200	1.13	
EXT DRO >C28-C36	20.0	10.0	04/08/2024	ND					

Surrogate: 1-Chlorooctane 89.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

---

Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Ensolum, LLC <b>Project Manager:</b> Aimee Cole <b>Address:</b> 3122 National Parks Hwy <b>City:</b> Carlsbad <b>Phone #:</b> (720) 384-7365 <b>State:</b> NM <b>Zip:</b> 88220 <b>Project #:</b> 03E2057104 <b>Project Owner:</b> <b>Project Location:</b> 32.5495,-103.1491 <b>Sample Name:</b> MATO SACKS				<b>P.O. #:</b> <b>Company:</b> ENSOLUM, LLC <b>Attn:</b> Aimee Cole <b>Address:</b> <b>City:</b> <b>State:</b> <b>Zip:</b> <b>Phone #:</b> 720-384-7365 <b>Fax #:</b>			
<b>FOR LAB USE ONLY</b>				<b>BILL TO</b>			
<b>Lab I.D.</b>  <b>Sample I.D.</b>  <b>Depth (feet)</b>	<b>Depth (feet)</b>	<b>(G)RAB OR (C)OMP.</b> <b># CONTAINERS</b>	<b>MATRIX</b>			<b>PRESERV.</b>	<b>SAMPLING</b>
			GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER :	ACID/BASE: ICE / COOL OTHER :	DATE TIME		
H247109 1 2 3 4 5 6 7	15 16 17 19 20 21 18	8' 8' 6' 5' 5' 8' 6'	1 1 1 1 1 1 1	1 1 1 1 1 1 1	1 1 1 1 1 1 1	1 1 1 1 1 1 1	1 1 1 1 1 1 1
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<b>Relinquished By:</b>				<b>Verbal Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Phone #:</b>			
<b>Relinquished By:</b>				<b>All Results are emailed. Please provide Email address:</b>			
<b>Delivered By: (Circle One)</b>				<b>Turnaround Time:</b>			
<b>Sample - UPS - Bus - Other:</b>				<b>Standard</b> <input type="checkbox"/> <b>Bacteria (only)</b> <input type="checkbox"/> <b>Sample Condition</b>			
<b>Observed Temp. °C</b>				<b>Thermometer ID - #113</b>			
<b>Corrected Temp. °C</b>				<b>Correction Factor</b>			



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

April 11, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/08/24 16:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: BF 01 0-4' (H241816-01)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2024	ND	1.99	99.4	2.00	1.39		
Toluene*	<0.050	0.050	04/09/2024	ND	2.29	114	2.00	6.66		
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.42	121	2.00	8.48		
Total Xylenes*	<0.150	0.150	04/09/2024	ND	7.29	122	6.00	9.03		
Total BTEX	<0.300	0.300	04/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 122 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	04/10/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	212	106	200	2.43	
DRO >C10-C28*	<10.0	10.0	04/09/2024	ND	203	102	200	0.231	
EXT DRO >C28-C36	<10.0	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 71.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 66.2 % 49.1-148

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 03 A 0-4' (H241816-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2024	ND	1.99	99.4	2.00	1.39		
Toluene*	<0.050	0.050	04/09/2024	ND	2.29	114	2.00	6.66		
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.42	121	2.00	8.48		
Total Xylenes*	<0.150	0.150	04/09/2024	ND	7.29	122	6.00	9.03		
Total BTEX	<0.300	0.300	04/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 121 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	04/10/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	212	106	200	2.43	
DRO >C10-C28*	<10.0	10.0	04/09/2024	ND	203	102	200	0.231	
EXT DRO >C28-C36	<10.0	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 75.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 69.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 01 4-8' (H241816-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2024	ND	1.99	99.4	2.00	1.39		
Toluene*	<0.050	0.050	04/09/2024	ND	2.29	114	2.00	6.66		
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.42	121	2.00	8.48		
Total Xylenes*	<0.150	0.150	04/09/2024	ND	7.29	122	6.00	9.03		
Total BTEX	<0.300	0.300	04/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	560	16.0	04/10/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	212	106	200	2.43	
DRO >C10-C28*	<10.0	10.0	04/09/2024	ND	203	102	200	0.231	
EXT DRO >C28-C36	<10.0	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 67.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 60.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 01 8-12' (H241816-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2024	ND	1.99	99.4	2.00	1.39		
Toluene*	<0.050	0.050	04/09/2024	ND	2.29	114	2.00	6.66		
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.42	121	2.00	8.48		
Total Xylenes*	<0.150	0.150	04/09/2024	ND	7.29	122	6.00	9.03		
Total BTEX	<0.300	0.300	04/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1260	16.0	04/10/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	212	106	200	2.43	
DRO >C10-C28*	85.2	10.0	04/09/2024	ND	203	102	200	0.231	
EXT DRO >C28-C36	<10.0	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 72.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 64.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 02 4-8' (H241816-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2024	ND	1.99	99.4	2.00	1.39		
Toluene*	<0.050	0.050	04/09/2024	ND	2.29	114	2.00	6.66		
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.42	121	2.00	8.48		
Total Xylenes*	<0.150	0.150	04/09/2024	ND	7.29	122	6.00	9.03		
Total BTEX	<0.300	0.300	04/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	04/10/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	212	106	200	2.43	
DRO >C10-C28*	<10.0	10.0	04/09/2024	ND	203	102	200	0.231	
EXT DRO >C28-C36	<10.0	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 80.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 71.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 02 8-12' (H241816-06)**

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2024	ND	1.99	99.4	2.00	1.39	
Toluene*	<b>0.165</b>	0.050	04/09/2024	ND	2.29	114	2.00	6.66	GC-NC1
Ethylbenzene*	<b>1.08</b>	0.050	04/09/2024	ND	2.42	121	2.00	8.48	
Total Xylenes*	<b>3.65</b>	0.150	04/09/2024	ND	7.29	122	6.00	9.03	
Total BTEX	<b>4.90</b>	0.300	04/09/2024	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 170 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>160</b>	16.0	04/10/2024	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<b>208</b>	100	04/09/2024	ND	212	106	200	2.43	
DRO >C10-C28*	<b>2860</b>	100	04/09/2024	ND	203	102	200	0.231	
EXT DRO >C28-C36	<b>433</b>	100	04/09/2024	ND					

Surrogate: 1-Chlorooctane 118 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 03 4-9' (H241816-07)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2024	ND	1.99	99.4	2.00	1.39		
Toluene*	<0.050	0.050	04/09/2024	ND	2.29	114	2.00	6.66		
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.42	121	2.00	8.48		
Total Xylenes*	<0.150	0.150	04/09/2024	ND	7.29	122	6.00	9.03		
Total BTEX	<0.300	0.300	04/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	832	16.0	04/10/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	217	108	200	2.50	
DRO >C10-C28*	<10.0	10.0	04/09/2024	ND	211	105	200	0.562	
EXT DRO >C28-C36	<10.0	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 76.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 04 4-9' (H241816-08)**

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.102</b>	0.050	04/10/2024	ND	1.99	99.4	2.00	1.39	GC-NC1
<b>Toluene*</b>	<b>2.43</b>	0.050	04/10/2024	ND	2.29	114	2.00	6.66	GC-NC1
<b>Ethylbenzene*</b>	<b>4.00</b>	0.050	04/10/2024	ND	2.42	121	2.00	8.48	
<b>Total Xylenes*</b>	<b>20.4</b>	0.150	04/10/2024	ND	7.29	122	6.00	9.03	
<b>Total BTEX</b>	<b>27.0</b>	0.300	04/10/2024	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 391 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>576</b>	16.0	04/10/2024	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>1070</b>	100	04/09/2024	ND	217	108	200	2.50	
<b>DRO &gt;C10-C28*</b>	<b>4490</b>	100	04/09/2024	ND	211	105	200	0.562	
<b>EXT DRO &gt;C28-C36</b>	<b>760</b>	100	04/09/2024	ND					

Surrogate: 1-Chlorooctane 162 % 48.2-134

Surrogate: 1-Chlorooctadecane 133 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/08/2024	Sampling Date:	04/08/2024
Reported:	04/11/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 05 4-8' (H241816-09)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/10/2024	ND	2.16	108	2.00	1.55		
Toluene*	<0.050	0.050	04/10/2024	ND	2.08	104	2.00	1.72		
Ethylbenzene*	<0.050	0.050	04/10/2024	ND	2.01	101	2.00	1.12		
Total Xylenes*	<0.150	0.150	04/10/2024	ND	5.86	97.7	6.00	1.06		
Total BTEX	<0.300	0.300	04/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 89.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1140	16.0	04/10/2024	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	217	108	200	2.50	
DRO >C10-C28*	<10.0	10.0	04/09/2024	ND	211	105	200	0.562	
EXT DRO >C28-C36	<10.0	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 73.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 83.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
GC-NC1	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC					
Project Manager: Almee Cole					
Address: 3122 National Parks Hwy					
City: Carlsbad		State: NM		Zip: 88220	
Phone #: (720) 384-7365		Fax #:			
Project #: GSE2057104		Project Owner: Mayenick			
Project Name: SEMU Permian 127 Flowline Release		State: NM		Zip: 88220	
Project Location: 32.5445, -103.1991		Phone #: (720) 384-7365		Fax #:	
Sampler Name: Chad Hamilton		P.O. #:		BILL TO	
FOR LAB USE ONLY		PRESERV.		SAMPLING	
Lab I.D.		Sample I.D.		Depth (feet)	
H24814	BFOI	O-4	(G)RAB OR (C)COMP.	# CONTAINERS	MATRIX
2	SuO3A	O-4		GROUNDWATER	WASTEWATER
3	SuO1	Y-8		SOIL	OIL
4	SuO1	8-12		SLUDGE	OTHER :
5	SuO2	Y-8		ACID/BASE:	ICE / COOL
6	SuO2	8-12		OTHER :	DATE TIME
7	SuO3	Y-4		X	X
8	SuO4	Y-4		X	X
9	SuO5	Y-8		X	X
PLEASE NOTE: Liability and Damages. Cardant's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims involving those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.		Relinquished By:		Date: 04/08/25	Received By:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Observed Temp.: °C Corrected Temp.: °C	Time: Date:	Sample Condition <input type="checkbox"/> Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials)
Turnaround Time:		Standard Rush	Bacteria (only) Sample Condition <input type="checkbox"/> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID #413 Correction Factor +0.5°C	All Results are emailed. Please provide Email address: ac@ensolum.com, mscaris@ensolum.com



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

---

April 10, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/09/24 13:56.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/10/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 05 15 (H241834-01)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2024	ND	2.08	104	2.00	0.651	
Toluene*	<0.050	0.050	04/09/2024	ND	2.19	110	2.00	1.92	
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.22	111	2.00	3.24	
Total Xylenes*	<0.150	0.150	04/09/2024	ND	6.62	110	6.00	3.49	
Total BTEX	<0.300	0.300	04/09/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3520	16.0	04/10/2024	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	225	113	200	2.43	
DRO >C10-C28*	<10.0	10.0	04/09/2024	ND	244	122	200	6.39	
EXT DRO >C28-C36	<10.0	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 83.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 83.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/10/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 06 15 (H241834-02)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/10/2024	ND	2.08	104	2.00	0.651		
Toluene*	<0.050	0.050	04/10/2024	ND	2.19	110	2.00	1.92		
Ethylbenzene*	0.175	0.050	04/10/2024	ND	2.22	111	2.00	3.24		
Total Xylenes*	0.879	0.150	04/10/2024	ND	6.62	110	6.00	3.49		
Total BTEX	1.05	0.300	04/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2640	16.0	04/10/2024	ND	416	104	400	3.77	QM-07	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	37.5	10.0	04/09/2024	ND	225	113	200	2.43	
DRO >C10-C28*	531	10.0	04/09/2024	ND	244	122	200	6.39	
EXT DRO >C28-C36	110	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 96.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/10/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 28 8 (H241834-03)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2024	ND	2.08	104	2.00	0.651		
Toluene*	<0.050	0.050	04/09/2024	ND	2.19	110	2.00	1.92		
Ethylbenzene*	<0.050	0.050	04/09/2024	ND	2.22	111	2.00	3.24		
Total Xylenes*	<0.150	0.150	04/09/2024	ND	6.62	110	6.00	3.49		
Total BTEX	<0.300	0.300	04/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	816	16.0	04/10/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2024	ND	225	113	200	2.43	
DRO >C10-C28*	169	10.0	04/09/2024	ND	244	122	200	6.39	
EXT DRO >C28-C36	37.8	10.0	04/09/2024	ND					

Surrogate: 1-Chlorooctane 87.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

---

April 15, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/09/24 13:56.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' at the beginning.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/15/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 22 13 (H241835-01)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/10/2024	ND	2.16	108	2.00	1.55		
Toluene*	<0.050	0.050	04/10/2024	ND	2.08	104	2.00	1.72		
Ethylbenzene*	<0.050	0.050	04/10/2024	ND	2.01	101	2.00	1.12		
Total Xylenes*	<0.150	0.150	04/10/2024	ND	5.86	97.7	6.00	1.06	GC-NC	
Total BTX	<0.300	0.300	04/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.8 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3320	16.0	04/10/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/10/2024	ND	225	113	200	2.43	
DRO >C10-C28*	28.2	10.0	04/10/2024	ND	244	122	200	6.39	
EXT DRO >C28-C36	<10.0	10.0	04/10/2024	ND					

Surrogate: 1-Chlorooctane 93.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/15/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 23 13 (H241835-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/10/2024	ND	2.16	108	2.00	1.55		
Toluene*	<0.050	0.050	04/10/2024	ND	2.08	104	2.00	1.72		
Ethylbenzene*	<0.050	0.050	04/10/2024	ND	2.01	101	2.00	1.12		
Total Xylenes*	<0.150	0.150	04/10/2024	ND	5.86	97.7	6.00	1.06		
Total BTEX	<0.300	0.300	04/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1520	16.0	04/10/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/10/2024	ND	225	113	200	2.43	
DRO >C10-C28*	<10.0	10.0	04/10/2024	ND	244	122	200	6.39	
EXT DRO >C28-C36	<10.0	10.0	04/10/2024	ND					

Surrogate: 1-Chlorooctane 87.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/15/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 24 13 (H241835-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/10/2024	ND	2.16	108	2.00	1.55		
Toluene*	<0.050	0.050	04/10/2024	ND	2.08	104	2.00	1.72		
Ethylbenzene*	<0.050	0.050	04/10/2024	ND	2.01	101	2.00	1.12		
Total Xylenes*	<0.150	0.150	04/10/2024	ND	5.86	97.7	6.00	1.06		
Total BTEX	<0.300	0.300	04/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1960	16.0	04/10/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/10/2024	ND	215	108	200	1.22	
DRO >C10-C28*	42.2	10.0	04/10/2024	ND	220	110	200	3.13	
EXT DRO >C28-C36	<10.0	10.0	04/10/2024	ND					

Surrogate: 1-Chlorooctane 93.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.9 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/15/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 25 13 (H241835-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/10/2024	ND	2.16	108	2.00	1.55		
Toluene*	<0.050	0.050	04/10/2024	ND	2.08	104	2.00	1.72		
Ethylbenzene*	<0.050	0.050	04/10/2024	ND	2.01	101	2.00	1.12		
Total Xylenes*	<0.150	0.150	04/10/2024	ND	5.86	97.7	6.00	1.06		
Total BTEX	<0.300	0.300	04/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.0 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1720	16.0	04/10/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/10/2024	ND	215	108	200	1.22	
DRO >C10-C28*	<10.0	10.0	04/10/2024	ND	220	110	200	3.13	
EXT DRO >C28-C36	<10.0	10.0	04/10/2024	ND					

Surrogate: 1-Chlorooctane 95.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/15/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 26 13 (H241835-05)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/10/2024	ND	2.16	108	2.00	1.55		
Toluene*	<0.050	0.050	04/10/2024	ND	2.08	104	2.00	1.72		
Ethylbenzene*	<0.050	0.050	04/10/2024	ND	2.01	101	2.00	1.12		
Total Xylenes*	<0.150	0.150	04/10/2024	ND	5.86	97.7	6.00	1.06		
Total BTEX	<0.300	0.300	04/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1640	16.0	04/10/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/10/2024	ND	215	108	200	1.22	
DRO >C10-C28*	<10.0	10.0	04/10/2024	ND	220	110	200	3.13	
EXT DRO >C28-C36	<10.0	10.0	04/10/2024	ND					

Surrogate: 1-Chlorooctane 85.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.0 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/09/2024	Sampling Date:	04/09/2024
Reported:	04/15/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS 27 8 (H241835-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/10/2024	ND	2.16	108	2.00	1.55		
Toluene*	<0.050	0.050	04/10/2024	ND	2.08	104	2.00	1.72		
Ethylbenzene*	<0.050	0.050	04/10/2024	ND	2.01	101	2.00	1.12		
Total Xylenes*	<0.150	0.150	04/10/2024	ND	5.86	97.7	6.00	1.06		
Total BTEX	<0.300	0.300	04/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 90.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	992	16.0	04/10/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/10/2024	ND	215	108	200	1.22	
DRO >C10-C28*	46.7	10.0	04/10/2024	ND	220	110	200	3.13	
EXT DRO >C28-C36	<10.0	10.0	04/10/2024	ND					

Surrogate: 1-Chlorooctane 89.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.9 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
GC-NC	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager

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

[illegible]



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

April 15, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/10/24 11:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/10/2024	Sampling Date:	04/10/2024
Reported:	04/15/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 06 0.5 (H241851-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2024	ND	2.13	107	2.00	0.427	
Toluene*	<0.050	0.050	04/11/2024	ND	2.27	114	2.00	0.197	
Ethylbenzene*	<0.050	0.050	04/11/2024	ND	2.33	117	2.00	0.405	
Total Xylenes*	<0.150	0.150	04/11/2024	ND	7.00	117	6.00	0.382	
Total BTX	<0.300	0.300	04/11/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	04/11/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/10/2024	ND	203	101	200	1.76	
DRO >C10-C28*	<10.0	10.0	04/10/2024	ND	215	107	200	0.868	
EXT DRO >C28-C36	<10.0	10.0	04/10/2024	ND					

Surrogate: 1-Chlorooctane 82.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.5 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/10/2024	Sampling Date:	04/10/2024
Reported:	04/15/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: FS29 4 (H241851-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/11/2024	ND	2.13	107	2.00	0.427		
Toluene*	<0.050	0.050	04/11/2024	ND	2.27	114	2.00	0.197		
Ethylbenzene*	<0.050	0.050	04/11/2024	ND	2.33	117	2.00	0.405		
Total Xylenes*	<0.150	0.150	04/11/2024	ND	7.00	117	6.00	0.382		
Total BTEX	<0.300	0.300	04/11/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	896	16.0	04/11/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/10/2024	ND	203	101	200	1.76		
DRO >C10-C28*	105	10.0	04/10/2024	ND	215	107	200	0.868		
EXT DRO >C28-C36	12.4	10.0	04/10/2024	ND						

Surrogate: 1-Chlorooctane 85.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.3 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



---

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### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Cardinal Laboratories

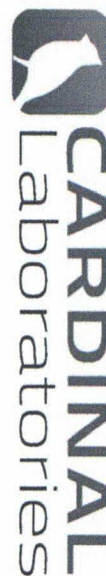
\*=Accredited Analyte

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

---

Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC										<b>BILL TO</b>										ANALYSIS REQUEST																																					
Project Manager: Aimee Cole										P.O. #:																																															
Address: 3122 National Parks Hwy										Company: Ensolum LLC																																															
City: Carlsbad										Attn: Aimee Cole																																															
Phone #: (720) 384-7365										Address: 3122 National Parks Hwy																																															
State: NM Zip: 88220																																																									
Project #: 0362057104										City: Carlsbad																																															
Project Name: SEMM Permian 127 Flowline Release										State: NM Zip: 88220																																															
Project Location: 32.3495, -108.1991										Phone #: (720) 384-7365																																															
Sampler Name: Chad Hamblen										Fax #:																																															
FOR LAB USE ONLY										<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">MATRIX</th> <th>PRESERV</th> <th>SAMPLING</th> </tr> <tr> <td>GROUNDWATER</td> <td></td> <td></td> <td></td> </tr> <tr> <td>WASTEWATER</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SOIL</td> <td></td> <td></td> <td></td> </tr> <tr> <td>OIL</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SLUDGE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>OTHER :</td> <td></td> <td></td> <td></td> </tr> </table>										MATRIX		PRESERV	SAMPLING	GROUNDWATER				WASTEWATER				SOIL				OIL				SLUDGE				OTHER :													
MATRIX		PRESERV	SAMPLING																																																						
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SOIL																																																									
OIL																																																									
SLUDGE																																																									
OTHER :																																																									
<div style="display: flex; justify-content: space-between;"> <div> <b>Lab I.D.</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">H41851</div> </div> <div> <b>Sample I.D.</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">1</div> </div> <div> <b>Depth (feet)</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">0-5</div> </div> </div>										<div style="display: flex; justify-content: space-between;"> <div> <b>(G)RAB OR (C)OMP.</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">G</div> </div> <div> <b># CONTAINERS</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">1</div> </div> </div>										<div style="display: flex; justify-content: space-between;"> <div> <b>DATE</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">4/10/24</div> </div> <div> <b>TIME</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">0824</div> </div> </div>																																					
<div style="display: flex; justify-content: space-between;"> <div> <b>Observed Temp. °C</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">11.0</div> </div> <div> <b>Corrected Temp. °C</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">11.4</div> </div> </div>										<div style="display: flex; justify-content: space-between;"> <div> <b>Sample Condition</b>  Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/>  Yes <input type="checkbox"/> No <input type="checkbox"/> </div> <div> <b>CHECKED BY:</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">[Signature]</div> </div> </div>										<div style="display: flex; justify-content: space-between;"> <div> <b>Turnaround Time:</b>  Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>  Thermometer ID #113  Correction Factor -0.5°C </div> <div> <b>Verbal Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: </div> </div>																																					
<b>Relinquished By:</b> <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">[Signature]</div>										<b>Received By:</b> <div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">[Signature]</div>										<b>REMARKS:</b> Acid @ ensolum.com, m3ork19@ensolum.com																																					
<b>Delivered By:</b> (Circle One) Sampler - UPS - Bus - Other:										<b>Verbal Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:										<b>REMARKS:</b>																																					



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

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April 12, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/11/24 14:43.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Snyder".

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/11/2024	Sampling Date:	04/11/2024
Reported:	04/12/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Dionica Hinojos
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 02 13'-15' (H241902-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2024	ND	2.14	107	2.00	2.20	
Toluene*	<0.050	0.050	04/11/2024	ND	2.07	104	2.00	2.35	
Ethylbenzene*	<0.050	0.050	04/11/2024	ND	2.01	101	2.00	2.19	
Total Xylenes*	<0.150	0.150	04/11/2024	ND	5.86	97.7	6.00	2.30	
Total BTEX	<0.300	0.300	04/11/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 89.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2000	16.0	04/12/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/12/2024	ND	188	93.9	200	3.64	
DRO >C10-C28*	102	10.0	04/12/2024	ND	189	94.5	200	10.7	
EXT DRO >C28-C36	13.7	10.0	04/12/2024	ND					

Surrogate: 1-Chlorooctane 80.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





---

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---

### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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A handwritten signature in black ink, appearing to read "Mike Snyder", is written over a horizontal line.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC

Project Manager: Aimee Cole

Address: 3122 National Parks Hwy

City: Carlsbad

State: NM Zip: 88220

Phone #: (720) 384-7365

Fax #:

Project #: 03E2057104

Project Owner:

Project Name: SEMU Permian 137 Flowline Release

Project Location: 3A.5495, -103.1441

Sample Name: Mario Sarks

FOR LAB USE ONLY

Matrix

Sample I.D.

Depth (feet)

1 SW02

13'-15'

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE COOL

OTHER :

DATE

TIME

4/11/24

0935

BTEx

TPH

CI-



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

---

April 16, 2024

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SEMU PERMIAN 127 FLOWLINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/15/24 14:43.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" being more prominent.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/15/2024	Sampling Date:	04/15/2024
Reported:	04/16/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 02 8-15 (H241966-01)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/15/2024	ND	2.29	114	2.00	1.75	
Toluene*	<0.050	0.050	04/15/2024	ND	2.20	110	2.00	1.74	
Ethylbenzene*	<0.050	0.050	04/15/2024	ND	2.13	107	2.00	1.77	
Total Xylenes*	<0.150	0.150	04/15/2024	ND	6.26	104	6.00	2.04	
Total BTEX	<0.300	0.300	04/15/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.8 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	04/16/2024	ND	464	116	400	7.14	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2024	ND	192	96.1	200	0.121	
DRO >C10-C28*	88.6	10.0	04/16/2024	ND	189	94.4	200	6.17	
EXT DRO >C28-C36	<10.0	10.0	04/16/2024	ND					

Surrogate: 1-Chlorooctane 85.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.5 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 AIMEE COLE  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	04/15/2024	Sampling Date:	04/15/2024
Reported:	04/16/2024	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 127 FLOWLINE RELEASE	Sampling Condition:	Cool & Intact
Project Number:	03E2057104	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK 32.5495, -103.1991		

**Sample ID: SW 04 4-9 (H241966-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/15/2024	ND	2.29	114	2.00	1.75		
Toluene*	<0.050	0.050	04/15/2024	ND	2.20	110	2.00	1.74		
Ethylbenzene*	<0.050	0.050	04/15/2024	ND	2.13	107	2.00	1.77		
Total Xylenes*	<0.150	0.150	04/15/2024	ND	6.26	104	6.00	2.04		
Total BTEX	<0.300	0.300	04/15/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	816	16.0	04/16/2024	ND	464	116	400	7.14		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/16/2024	ND	192	96.1	200	0.121	
DRO >C10-C28*	14.0	10.0	04/16/2024	ND	189	94.4	200	6.17	
EXT DRO >C28-C36	<10.0	10.0	04/16/2024	ND					

Surrogate: 1-Chlorooctane 89.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



---

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---

### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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

---

Celey D. Keene, Lab Director/Quality Manager





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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

**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

QUESTIONS  
  
Action 341231

QUESTIONS

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:
	331199
	Action Number:
	341231
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2331056887
Incident Name	NAPP2331056887 SEMU PERMIAN 127 FLOWLINE RELEASE @ 30-025-33895
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received
Incident Well	[30-025-33895] SEMU PERMIAN #127

Location of Release Source	
Please answer all the questions in this group.	
Site Name	SEMU PERMIAN 127 FLOWLINE RELEASE
Date Release Discovered	11/06/2023
Surface Owner	Private

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Corrosion   Flow Line - Production   Crude Oil   Released: 4 BBL   Recovered: 1 BBL   Lost: 3 BBL.
Produced Water Released (bbls) Details	Cause: Corrosion   Flow Line - Production   Produced Water   Released: 35 BBL   Recovered: 18 BBL   Lost: 17 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Flowline corrosion lead to a release of approximately 35 bbls of produced water and 4 bbls of oil into open pasture. 20 bbls of fluid was recovered during the initial response.

**District I**

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**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**

QUESTIONS, Page 2

Action 341231

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
	Action Number:	341231
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**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	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Aimee Cole Email: <a href="mailto:acole@ensolum.com">acole@ensolum.com</a> Date: 05/06/2024
--	---

**District I**

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**District II**

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**District III**

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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**

QUESTIONS, Page 3

Action 341231

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
	Action Number:	341231
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	Attached Document
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 1 and 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride	(EPA 300.0 or SM4500 Cl B)	3520
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	679
GRO+DRO	(EPA SW-846 Method 8015M)	569
BTEX	(EPA SW-846 Method 8021B or 8260B)	1.1
Benzene	(EPA SW-846 Method 8021B or 8260B)	0

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	03/18/2024
On what date will (or did) the final sampling or liner inspection occur	04/15/2024
On what date will (or was) the remediation complete(d)	04/15/2024
What is the estimated surface area (in square feet) that will be reclaimed	5700
What is the estimated volume (in cubic yards) that will be reclaimed	845
What is the estimated surface area (in square feet) that will be remediated	5700
What is the estimated volume (in cubic yards) that will be remediated	3200

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

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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**

QUESTIONS, Page 4

Action 341231

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
	Action Number:	341231
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	R360 Artesia LLC LANDFARM [FEEM0112340644]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	No
(In Situ) Soil Vapor Extraction	No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	No
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No
Ground Water Abatement pursuant to 19.15.30 NMAC	No
OTHER (Non-listed remedial process)	No
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Aimee Cole Email: <a href="mailto:acole@ensolum.com">acole@ensolum.com</a> Date: 05/06/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	



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Action 341231

QUESTIONS (continued)

Operator:  Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:  331199
	Action Number:  341231
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No



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QUESTIONS, Page 6

Action 341231

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:
	331199
	Action Number:
	341231
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	331591
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	04/11/2024
What was the (estimated) number of samples that were to be gathered	4
What was the sampling surface area in square feet	800

**Remediation Closure Request**

Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	5700
What was the total volume (cubic yards) remediated	3200
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	5700
What was the total volume (in cubic yards) reclaimed	845
Summarize any additional remediation activities not included by answers (above)	The top four feet meet reclamation requirements, below 4 feet meets closure criteria.

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 (in .pdf format) 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.

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.

I hereby agree and sign off to the above statement	Name: Aimee Cole Email: acole@ensolum.com Date: 05/06/2024
--	--

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QUESTIONS, Page 7

Action 341231

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
	Action Number:	341231
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS**

<b>Reclamation Report</b>	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	5700
What was the total volume of replacement material (in cubic yards) for this site	3200
<i>Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.</i>	
Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseedling commence(d)	04/23/2024
Summarize any additional reclamation activities not included by answers (above)	Excavation was backfilled and seeded. Backfill material was sampled and met reclamation requirements.
<i>The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseedling plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Aimee Cole Email: acole@ensolum.com Date: 05/06/2024

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QUESTIONS, Page 8  
  
Action 341231

QUESTIONS (continued)

Operator:  Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:  331199
	Action Number:  341231
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Revegetation Report	
Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.	
Requesting a restoration complete approval with this submission	No
Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.	

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CONDITIONS

Action 341231

CONDITIONS

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:
	331199
	Action Number:
	341231
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

CONDITIONS

Created By	Condition	Condition Date
amaxwell	The reclamation report has been approved pursuant to 19.15.29.13 E. NMAC. The acceptance of this 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; or if the location fails to revegetate properly. In addition, OCD approval does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.	6/11/2024
amaxwell	A revegetation report will not be accepted until revegetation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	6/11/2024
amaxwell	All revegetation activities will need to be documented and included in the revegetation report. The revegetation report will need to include: An executive summary of the revegetation activities including: Seed mix, Method of seeding, dates of when the release area was reseeded, information pertinent to inspections, information about any amendments added to the soil, information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC, and any additional information; a scaled Site Map including area that was revegetated in square feet; and pictures of the revegetated areas during reseeding activities, inspections, and final pictures when revegetation is achieved.	6/11/2024