



April 19, 2023

New Mexico Oil Conservation Division

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

**Re: Closure Request
Mesa B East Poly Line Weld Failure
Incident Number NAPP2232980823
Lea County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of BTA Oil Producers, LLC (BTA), has prepared this *Closure Request* to document assessment, delineation and soil sampling activities performed at the Mesa B East Poly Line Weld Failure (Site). The purpose of the Site assessment, delineation, and soil sampling activities was to assess for the presence or absence of impacts to soil resulting from a produced water release at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, BTA is submitting this *Closure Request*, describing Site assessment and delineation activities that have occurred and requesting closure for Incident Number NAPP2232980823.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit A, Section 7, Township 26 South, Range 33 East, in Lea County, New Mexico (32.06018°, -103.60497°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On November 24, 2022, a leak from an 8-inch poly line resulted in the release of approximately 300 barrels (bbls) of produced water onto the well pad and surrounding pasture area. A vacuum truck was dispatched to the Site to recover free-standing fluids; approximately 15 bbls of produced water were recovered. BTA reported the release immediately to the New Mexico Oil Conservation Division (NMOCD) and submitted a *Release Notification Form C-141* (Form C-141) on December 9, 2022. The release was assigned Incident Number NAPP2232980823.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is estimated to be between 51 feet and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is a soil boring permitted by the New Mexico Office of the State Engineer (NMOSE; C-04547), located approximately 0.23 miles south of the Site. The groundwater well has a reported depth to groundwater of 89.5 feet bgs and a total depth of 112 feet bgs. Ground surface elevation at the

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groundwater well location is 3,252 feet above mean sea level (amsl), which is approximately 36 feet lower in elevation than the Site. All wells used for depth to groundwater determination are presented on Figure 1. The associated well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a seasonal dry wash, located approximately 941 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

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

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

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH 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 immediately reclaimed following remediation.

SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

Between December 12, 2022 and February 7, 2023, Ensolum personnel were at the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Seventeen assessment soil samples (SS01 through SS17) were collected within and around the release extent at a depth of approximately 0.5 feet bgs to assess surficial soil associated with the release and the lateral extent of the release. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The 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 as Appendix B.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH- GRO, TPH- DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method SM4500.

Laboratory analytical results for assessment soil samples SS01 through SS17 indicated all COC concentrations were compliant with the Closure Criteria and reclamation requirement where applicable. Additional delineation activities within the release extent to confirm the vertical extent of the release appeared to be warranted.

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DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

Between February 27, 2023 and March 29, 2023, Ensolum returned to the Site to confirm the vertical extent of the release in the vicinity of soil sample locations SS05 through SS10, SS12, and SS15, based on field screening and laboratory results. Driven by field screening for VOCs and chloride, delineation soil samples were collected at depths ranging from 1-foot to 4 feet bgs. The delineation soil samples were collected, handled and analyzed following the same procedures previously described. Field screening results and observations were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil sample locations were mapped utilizing a handheld GPS unit and are depicted on Figure 2. Photographic documentation was completed during the Site visit and is included in Appendix B.

Laboratory analytical results for delineation soil sample locations SS05/SS05B through SS10/SS10B, SS12/SS12B and SS15/SS15B indicated all COC concentrations were compliant with the Closure Criteria and reclamation requirement, where applicable. Laboratory analytical results are summarized in Table 1 and the complete analytical reports are included as Appendix D.

CLOSURE REQUEST

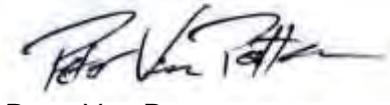
Site assessment and delineation activities were conducted at the Site to address the November 24, 2022, release of produced water at the Site. Laboratory analytical results for delineation soil samples indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirement where applicable. Based on soil sample analytical results, impacted soil was not identified and as such, no further remediation appears to be required.

Depth to groundwater has been estimated to be between 51 feet and 100 feet bgs and no other sensitive receptors were identified near the release extent. BTA believes these remedial actions are protective of human health, the environment, and groundwater. As such, BTA respectfully requests closure for Incident Number NAPP2232980823. Notifications submitted to the NMOCD are included in Appendix E and the final Form C-141 is included in Appendix F.

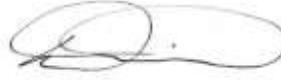
BTA Oil Producers, LLC
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Mesa B East Poly Line Weld Failure

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely,
Ensolum, LLC



Peter Van Patten
Project Geologist



Daniel Moir, PG
Senior Managing Geologist

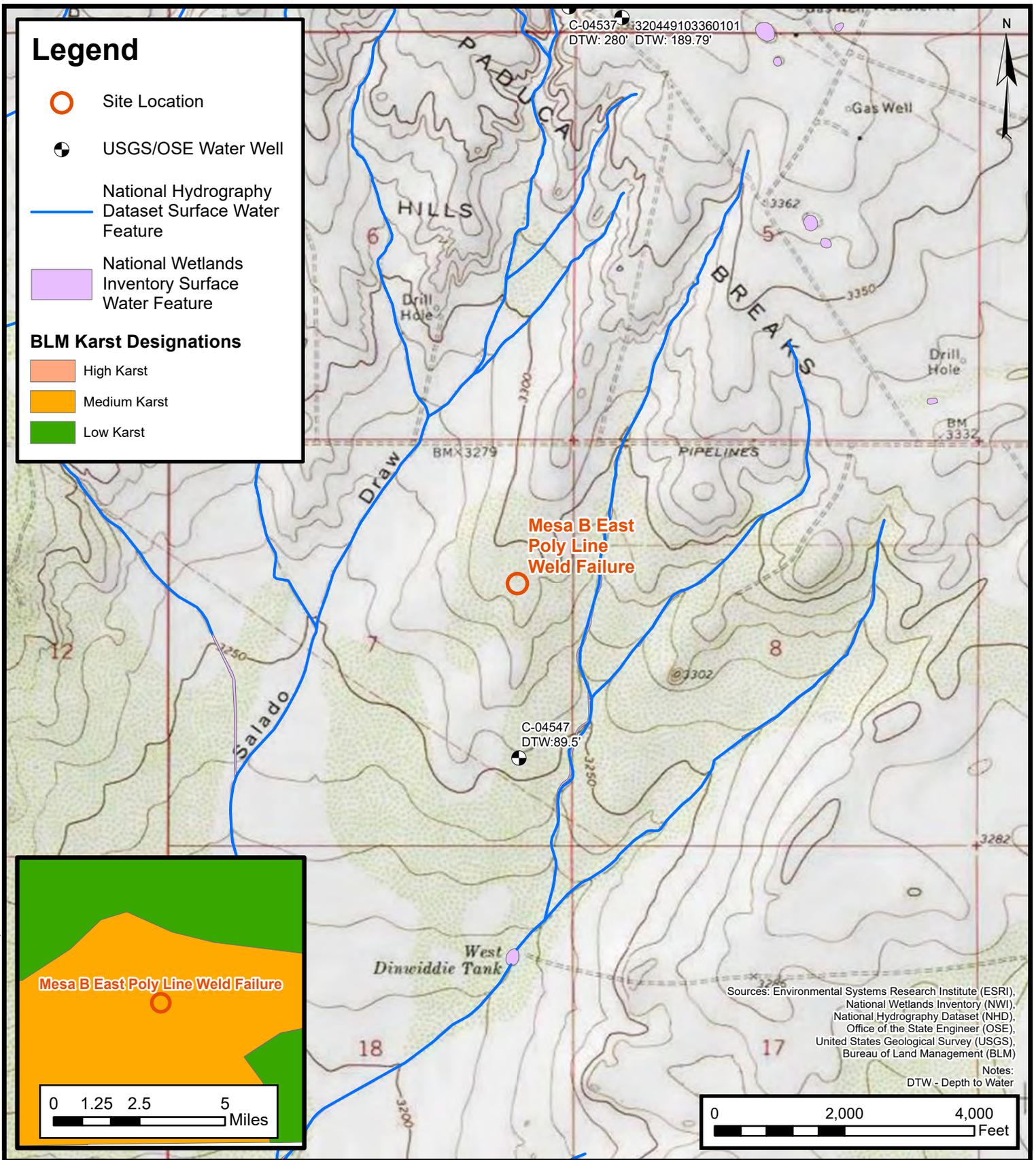
cc: Bob Hall, BTA
Nathan Sirgo, BTA
Bureau of Land Management

Appendices:

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



FIGURES



Document Path: C:\Users\jvaughn\OneDrive\GIS\Ensolium\GIS\Ensolium\GIS\Projects\Site Characterization - NM11 - MCOs\Main.aprx

Legend

- Site Location
- USGS/OSE Water Well
- National Hydrography Dataset Surface Water Feature
- National Wetlands Inventory Surface Water Feature

BLM Karst Designations

- High Karst
- Medium Karst
- Low Karst

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0 1.25 2.5 5 Miles

Sources: Environmental Systems Research Institute (ESRI),
 National Wetlands Inventory (NWI),
 National Hydrography Dataset (NHD),
 Office of the State Engineer (OSE),
 United States Geological Survey (USGS),
 Bureau of Land Management (BLM)

Notes:
 DTW - Depth to Water

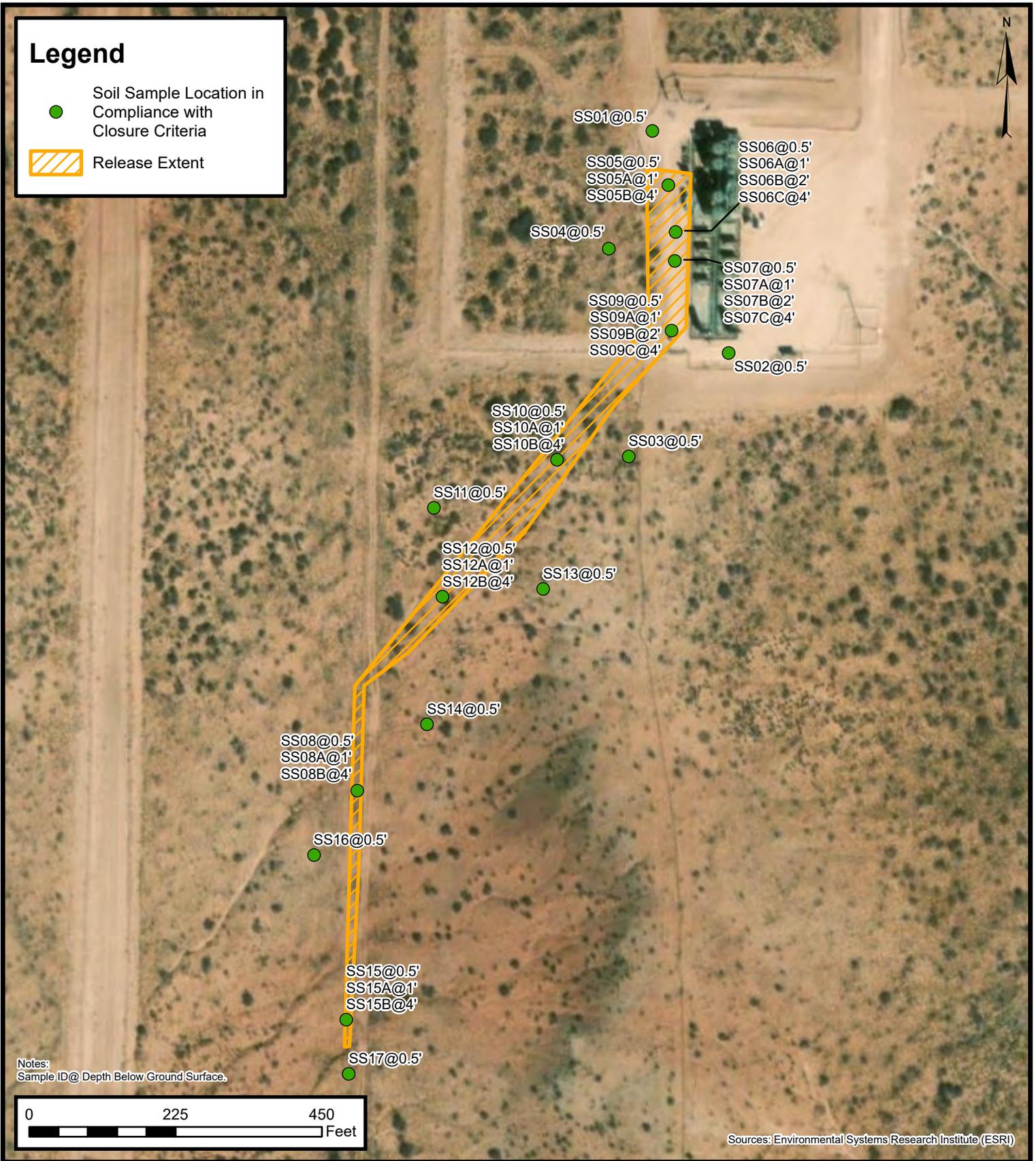
ENSOLUM
 Environmental, Engineering and
 Hydrogeologic Consultants

Site Receptor Map

Mesa B East Poly Line Weld Failure
 BTA Oil Producers, LLC
 Incident Number: nAPP2232980823
 Unit A, Sec 7, T26S, R33E
 Lea County, New Mexico

FIGURE

1



Document Path: C:\Users\jvstin\Videos\GIS\Ensolium\GIS3 - Carlsbad\0 - Client Template\0000000001 - Project Template\1 - Maps\Templates\Template - Soil Sample Locations.aprx



Soil Sample Locations Map

Mesa B East Poly Line Weld Failure
 BTA Oil Producers, LLC
 Incident Number: nAPP2232980823
 Unit A, Sec 7, T26S, R33E
 Lea County, New Mexico

FIGURE
2



TABLES



**TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Mesa B East Poly Line Weld Failure
BTA Oil Producers, LLC
Lea County, New Mexico**

Sample I.D.	Sample Date	Sample 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
Delineation Soil Samples										
SS01	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS02	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS03	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*
SS04	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*
SS05	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,520
SS05A	02/27/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
SS05B	03/29/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
SS06	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,000
SS06A	02/27/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	880
SS06B	02/27/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS06C	03/29/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
SS07	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,920
SS07A	02/27/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,600
SS07B	02/27/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	554
SS07C	03/29/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS08	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0*
SS08A	02/27/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*
SS08B	03/29/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS09	12/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS09A	02/27/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	992
SS09B	02/27/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	576
SS09C	03/29/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0



**TABLE 1
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Mesa B East Poly Line Weld Failure
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Sample I.D.	Sample Date	Sample 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
SS10	02/07/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0*
SS10A	02/27/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0*
SS10B	03/29/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS11	02/07/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*
SS12	02/07/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*
SS12A	02/27/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0*
SS12B	03/29/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS13	02/07/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*
SS14	02/07/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*
SS15	02/07/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0*
SS15A	02/27/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*
SS15B	03/29/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS16	02/07/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0*
SS17	02/07/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0*

Notes:

bgs: below ground surface
 mg/kg: milligrams per kilogram
 NMOCD: New Mexico Oil Conservation Division
 NMAC: New Mexico Administrative Code
 BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
 * indicates sample was collected in area to be reclaimed after remediation is complete; reclamation requirement for chloride in the top 4 feet is 600 mg/kg and total TPH is 100 mg/kg.

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



APPENDIX A

Referenced Well Records



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

OSE DTI AUG 2 2021 PM4:44

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD1 (MW-1)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4547			
	WELL OWNER NAME(S) BTA Oil Producers				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 104 S. Pecos St.				CITY Midland	STATE TX	ZIP 79701	
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 3	SECONDS 14.34	N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND		
	LONGITUDE 103	36	16.96	W	* DATUM REQUIRED: WGS 84			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE NE SE SE Sec. 07 T26S R33E								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249	NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.			
	DRILLING STARTED 07/15/2021	DRILLING ENDED 07/15/2021	DEPTH OF COMPLETED WELL (FT) temporary well material	BORE HOLE DEPTH (FT) 112	DEPTH WATER FIRST ENCOUNTERED (FT) unknown			
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)				STATIC WATER LEVEL IN COMPLETED WELL (FT) 89.5			
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	21	±8.5	Boring- HSA	--	--	--	--
	21	112	±3.5	Boring- Air Rotary	--	--	--	--
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. C-4547	POD NO. 1	TRN NO. 698291
LOCATION 26S-33E-07	4-4-2	WELL TAG ID NO. NA

2021-07-28_C-4547_POD1_OSE_Well Record and Log_mesa1-for sign

Final Audit Report

2021-07-29

Created:	2021-07-29	OSE DJT AUG 2 2021 PM4:44
By:	Lucas Middleton (lucas@atkinseng.com)	
Status:	Signed	
Transaction ID:	CBJCHBCAABAA3aQOFUKeCXoHbozKpK1XeoMdl53lwclm	

"2021-07-28_C-4547_POD1_OSE_Well Record and Log_mesa1-for sign" History

-  Document created by Lucas Middleton (lucas@atkinseng.com)
2021-07-29 - 8:40:54 PM GMT- IP address: 69.21.248.123
-  Document emailed to Jack Atkins (jack@atkinseng.com) for signature
2021-07-29 - 8:41:43 PM GMT
-  Email viewed by Jack Atkins (jack@atkinseng.com)
2021-07-29 - 8:43:29 PM GMT- IP address: 64.90.153.232
-  Document e-signed by Jack Atkins (jack@atkinseng.com)
Signature Date: 2021-07-29 - 8:44:00 PM GMT - Time Source: server- IP address: 64.90.153.232
-  Agreement completed.
2021-07-29 - 8:44:00 PM GMT



lea County, New Mexico

Latitude 32°04'49", Longitude 103°36'01" NAD27

Land-surface elevation 3,383 feet above NAVD88

This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

[Table of data](#)
[Tab-separated data](#)
[Graph of data](#)
[Reselect period](#)

Date	Time	Water-level date-time accuracy	Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	Status	Method of measurement	Measuring agency	Source of measurement	Water-level approval status
1981-03-25			D	62610	3189.23	NGVD29	P	Z			A
1981-03-25			D	62611	3190.85	NAVD88	P	Z			A
1981-03-25			D	72019	192.15		P	Z			A
1986-03-18			D	62610	3191.59	NGVD29	1	Z			A
1986-03-18			D	62611	3193.21	NAVD88	1	Z			A
<i>Released to Imaging: 7/20/2023 12:04:48 PM</i>				72019	189.79		1	Z			A



APPENDIX B

Photographic Log



APPENDIX C

Lithologic Soil Sampling Logs

							Sample Name: SS05		Date: 2/27/23	
							Site Name: Mesa B East Polyline Weld Failure			
							Incident Number: nAPP2232980823			
							Job Number: 03C2012017			
LITHOLOGIC / SOIL SAMPLING LOG							Logged By: Peter Van Patten		Method: Hand auger	
Coordinates: 32.060167, -103.605173							Hole Diameter: 4"		Total Depth: 4'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. Correction factor of 40% applied.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
Dry	240	1.8	N	SS05	0.5	0.5	CCHE	CALICHE, no staining, no odor, light tan, poorly graded, poorly sorted, abundant limestone gravel. SAND, no staining, no odor, pale brown-tan color, poorly graded sand		
				SS05A	1	1	SP-SM			
Dry	<173.6	2.2	N	SS05B	4	4	SP-SM	SAND, no staining, no odor, tan, poorly graded, some small gravel Total Depth @ 4 ft bgs.		
						TD				

		Sample Name: SS06		Date: 2/27/23				
		Site Name: Mesa B East Polyline Weld Failure						
		Incident Number: nAPP2232980823						
		Job Number: 03C2012017						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.059998, -103.605143			Logged By: Peter Van Patten		Method: Hand auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. Correction factor of 40% applied.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
				SS06	0.5	0	CCHE	
Dry	1,708	1.9	N	SS06A	1	0.5	SP-SM	CALICHE, no staining, no odor, light tan, poorly graded, poorly sorted, abundant limestone gravel.
Dry	<173.6	1.8	N	SS06B	2	1	SP-SM	SAND, no staining, no odor, pale brown-tan color, poorly graded sand
						2		
						3		
Dry	<173.6	1.4	N	SS06C	4	2	SP-SM	SAND, no staining, no odor, tan, poorly graded
						3		
						4		
						4	SP-SM	SAND, no staining, no odor, tan, poorly graded, some small gravel
						TD		Total Depth @ 4 ft bgs.

								Sample Name: SS07	Date: 2/27/23
								Site Name: Mesa B East Polyline Weld Failure	
								Incident Number: nAPP2232980823	
								Job Number: 03C2012017	
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Peter Van Patten	Method: Hand auger
Coordinates: 32.059896, -103.605140								Hole Diameter: 4"	Total Depth: 4'
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. Correction factor of 40% applied.									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions	
						0			
Dry	1,960	2.3	N	SS07	0.5	0.5	CCHE	CALICHE, no staining, no odor, light tan, poorly graded, poorly sorted, abundant limestone gravel.	
				SS07A	1	1	SP-SM	SAND, no staining, no odor, tan color, poorly graded sand	
Dry	571	1.6	N	SS07B	2	2	SP-SM	SAND, no staining, no odor, poorly graded	
						3			
Dry	<173.6	1.4	N	SS07C	4	4	SP-SM	SAND, no staining, no odor, tan, poorly graded, some small gravel	
						TD		Total Depth @ 4 ft bgs.	

		Sample Name: SS08		Date: 2/27/23				
		Site Name: Mesa B East Polyline Weld Failure						
		Incident Number: nAPP2232980823						
		Job Number: 03C2012017						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.058008, -103.606490			Logged By: Peter Van Patten		Method: Hand auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. Correction factor of 40% applied.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	<173.6	3	N	SS08	0.5	0.5	CCHE	CALICHE, no staining, no odor, light tan, poorly graded, poorly sorted, abundant limestone gravel. SAND, no staining, no odor, tan color, poorly graded sand
				SS08A	1	1	SP-SM	
						2		
						3		
Dry	<173.6	0.7	N	SS08B	4	4	SP-SM	SAND, no staining, no odor, tan, poorly graded, some small gravel
						TD		Total Depth @ 4 ft bgs.

								Sample Name: SS09		Date: 2/27/23	
								Site Name: Mesa B East Polyline Weld Failure			
								Incident Number: nAPP2232980823			
								Job Number: 03C2012017			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Peter Van Patten		Method: Hand auger	
Coordinates: 32.059647, -103.605159						Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. Correction factor of 40% applied.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
				SS09	0.5	0	CCHE	CALICHE, no staining, no odor, light tan, poorly graded, poorly sorted, abundant limestone gravel.			
Dry	1,092	2.2	N	SS09A	1	0.5	SP-SM				
Dry	571	2.2	N	SS09B	1.5	1	SP-SM				
						1.5					
						2		SAND, no odor, no staining, poorly graded, tan			
						3					
Dry	<173.6	1.2	N	SS09C	4	2	SP-SM				
						3		SAND, no staining, no odor, tan, poorly graded, some small gravel			
						4					
						TD		Total Depth @ 4 ft bgs.			

		Sample Name: SS10		Date: 2/27/23				
		Site Name: Mesa B East Polyline Weld Failure						
		Incident Number: nAPP2232980823						
		Job Number: 03C2012017						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.05919, -103.605640			Logged By: Peter Van Patten		Method: Hand auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. Correction factor of 40% applied.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
				SS10	0.5	0	CCHE	
Dry	<173.6	7.5	N	SS10A	1	0.5	SP-SM	CALICHE, no staining, no odor, light tan, poorly graded, poorly sorted, abundant limestone gravel.
						1		SAND, no staining, no odor, tan color, poorly graded sand, some gravel
						2		
						3		
Dry	<173.6	0.9	N	SS10B	4	4	CCHE	CALICHE, no staining, no odor, white-light tan, poorly sorted, limestone gravel.
						TD		Total Depth @ 4 ft bgs.

		Sample Name: SS12		Date: 2/27/23				
		Site Name: Mesa B East Polyline Weld Failure						
		Incident Number: nAPP2232980823						
		Job Number: 03C2012017						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.0586950, -103.6061223			Logged By: Peter Van Patten		Method: Hand auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. Correction factor of 40% applied.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	<173.6	6.8	N	SS12	0.5	0.5	CCHE	CALICHE, no staining, no odor, light tan, poorly graded, poorly sorted, abundant limestone gravel. SAND, no staining, no odor, tan color, poorly graded sand, some gravel
				SS12A	1	1	SP-SM	
						2		
						3		
Dry	<173.6	1.5	N	SS12B	4	4	SP-SM	SAND, no staining, no odor, dark tan-brown, poorly sorted, some gravel
						TD		Total Depth @ 4 ft bgs.

		Sample Name: SS15		Date: 2/27/23				
		Site Name: Mesa B East Polyline Weld Failure						
		Incident Number: nAPP2232980823						
		Job Number: 03C2012017						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.057185, -103.606528			Logged By: Peter Van Patten		Method: Hand auger			
			Hole Diameter: 4"		Total Depth: 4'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. Correction factor of 40% applied.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	<173.6	2.6	N	SS15	0.5	0.5	CCHE	CALICHE, no staining, no odor, light tan, poorly graded, poorly sorted, abundant limestone gravel.
				SS15A	1	1	SP-SM	
Dry	<173.6	0.7	N	SS15B	4	4	SP-SM	SAND, no staining, no odor, medium brown, poorly sorted, some gravel
						TD		Total Depth @ 4 ft bgs.



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



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

December 20, 2022

HADLIE GREEN
ENSOLUM, LLC
705 W WADLEY AVE.
MIDLAND, TX 79705

RE: MESA B EAST

Enclosed are the results of analyses for samples received by the laboratory on 12/15/22 10:40.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene
Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 01 (H225916-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59	
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03	
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82	
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585	
Total BTEX	<0.300	0.300	12/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/16/2022	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	12/17/2022	ND	203	102	200	0.878	
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	186	93.2	200	1.02	
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND					

Surrogate: 1-Chlorooctane 88.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 96.3 % 46.3-178

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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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 02 (H225916-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59		
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03		
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82		
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585		
Total BTEX	<0.300	0.300	12/17/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	12/16/2022	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	12/17/2022	ND	203	102	200	0.878		
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	186	93.2	200	1.02		
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND						

Surrogate: 1-Chlorooctane 70.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 76.7 % 46.3-178

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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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 03 (H225916-03)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59	
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03	
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82	
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585	
Total BTEX	<0.300	0.300	12/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/16/2022	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	12/17/2022	ND	203	102	200	0.878	
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	186	93.2	200	1.02	
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND					

Surrogate: 1-Chlorooctane 88.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 98.4 % 46.3-178

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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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 04 (H225916-04)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59	
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03	
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82	
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585	
Total BTEX	<0.300	0.300	12/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/16/2022	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	12/17/2022	ND	203	102	200	0.878	
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	186	93.2	200	1.02	
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND					

Surrogate: 1-Chlorooctane 83.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 90.5 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 05 (H225916-05)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59		
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03		
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82		
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585		
Total BTEX	<0.300	0.300	12/17/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1520	16.0	12/16/2022	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	12/17/2022	ND	203	102	200	0.878		
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	186	93.2	200	1.02		
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND						

Surrogate: 1-Chlorooctane 87.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 94.8 % 46.3-178

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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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 06 (H225916-06)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59	
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03	
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82	
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585	
Total BTEX	<0.300	0.300	12/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2000	16.0	12/16/2022	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	12/17/2022	ND	203	102	200	0.878	
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	186	93.2	200	1.02	
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND					

Surrogate: 1-Chlorooctane 92.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 101 % 46.3-178

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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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 07 (H225916-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59	
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03	
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82	
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585	
Total BTEX	<0.300	0.300	12/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1920	16.0	12/16/2022	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	12/17/2022	ND	219	110	200	5.96	QM-07
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	197	98.4	200	6.41	
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND					

Surrogate: 1-Chlorooctane 94.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 105 % 46.3-178

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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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 08 (H225916-08)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59	
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03	
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82	
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585	
Total BTEX	<0.300	0.300	12/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/16/2022	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	12/17/2022	ND	219	110	200	5.96	
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	197	98.4	200	6.41	
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND					

Surrogate: 1-Chlorooctane 114 % 45.3-161

Surrogate: 1-Chlorooctadecane 127 % 46.3-178

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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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	12/15/2022	Sampling Date:	12/12/2022
Reported:	12/20/2022	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA CO		

Sample ID: SS 09 (H225916-09)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/17/2022	ND	2.06	103	2.00	1.59		
Toluene*	<0.050	0.050	12/17/2022	ND	2.15	107	2.00	2.03		
Ethylbenzene*	<0.050	0.050	12/17/2022	ND	2.17	108	2.00	1.82		
Total Xylenes*	<0.150	0.150	12/17/2022	ND	6.48	108	6.00	0.585		
Total BTEX	<0.300	0.300	12/17/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	12/16/2022	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	12/17/2022	ND	219	110	200	5.96		
DRO >C10-C28*	<10.0	10.0	12/17/2022	ND	197	98.4	200	6.41		
EXT DRO >C28-C36	<10.0	10.0	12/17/2022	ND						

Surrogate: 1-Chlorooctane 100 % 45.3-161

Surrogate: 1-Chlorooctadecane 111 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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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

Form with sections: BILL TO, ANALYSIS REQUEST, Lab I.D., Sample I.D., MATRIX, PRESERV., SAMPLING. Includes handwritten entries for company name (Eosplum), project manager (Hadlie Green), address (5122 National Parks Hwy), and analysis times (12-12 11:15 to 13:45).

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses.

Form with sections: Relinquished By, Received By, Verbal Result, REMARKS, Turnaround Time, Bacteria (only) Sample Condition. Includes handwritten signatures and dates (12-15-22).

FORM-006 R 3.3 07/16/22

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



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

February 13, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA B EAST

Enclosed are the results of analyses for samples received by the laboratory on 02/08/23 14:45.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
 HADLIE GREEN
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	02/08/2023	Sampling Date:	02/07/2023
Reported:	02/13/2023	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - LEA COUNTY, NM		

Sample ID: SS 10 (H230570-01)

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	02/11/2023	ND	2.07	104	2.00	0.347		
Toluene*	<0.050	0.050	02/11/2023	ND	2.16	108	2.00	3.81		
Ethylbenzene*	<0.050	0.050	02/11/2023	ND	2.12	106	2.00	3.27		
Total Xylenes*	<0.150	0.150	02/11/2023	ND	6.37	106	6.00	3.93		
Total BTEX	<0.300	0.300	02/11/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	02/10/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/10/2023	ND	181	90.5	200	3.40		
DRO >C10-C28*	<10.0	10.0	02/10/2023	ND	190	95.0	200	2.35		
EXT DRO >C28-C36	<10.0	10.0	02/10/2023	ND						

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 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
 HADLIE GREEN
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	02/08/2023	Sampling Date:	02/07/2023
Reported:	02/13/2023	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - LEA COUNTY, NM		

Sample ID: SS 11 (H230570-02)

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	02/11/2023	ND	2.07	104	2.00	0.347	
Toluene*	<0.050	0.050	02/11/2023	ND	2.16	108	2.00	3.81	
Ethylbenzene*	<0.050	0.050	02/11/2023	ND	2.12	106	2.00	3.27	
Total Xylenes*	<0.150	0.150	02/11/2023	ND	6.37	106	6.00	3.93	
Total BTEX	<0.300	0.300	02/11/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/10/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/10/2023	ND	181	90.5	200	3.40	
DRO >C10-C28*	<10.0	10.0	02/10/2023	ND	190	95.0	200	2.35	
EXT DRO >C28-C36	<10.0	10.0	02/10/2023	ND					

Surrogate: 1-Chlorooctane 98.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 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
 HADLIE GREEN
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	02/08/2023	Sampling Date:	02/07/2023
Reported:	02/13/2023	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - LEA COUNTY, NM		

Sample ID: SS 12 (H230570-03)

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	02/11/2023	ND	2.07	104	2.00	0.347	
Toluene*	<0.050	0.050	02/11/2023	ND	2.16	108	2.00	3.81	
Ethylbenzene*	<0.050	0.050	02/11/2023	ND	2.12	106	2.00	3.27	
Total Xylenes*	<0.150	0.150	02/11/2023	ND	6.37	106	6.00	3.93	
Total BTEX	<0.300	0.300	02/11/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/10/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/10/2023	ND	181	90.5	200	3.40	
DRO >C10-C28*	<10.0	10.0	02/10/2023	ND	190	95.0	200	2.35	
EXT DRO >C28-C36	<10.0	10.0	02/10/2023	ND					

Surrogate: 1-Chlorooctane 93.2 % 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
 HADLIE GREEN
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	02/08/2023	Sampling Date:	02/07/2023
Reported:	02/13/2023	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - LEA COUNTY, NM		

Sample ID: SS 13 (H230570-04)

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	02/11/2023	ND	2.07	104	2.00	0.347		
Toluene*	<0.050	0.050	02/11/2023	ND	2.16	108	2.00	3.81		
Ethylbenzene*	<0.050	0.050	02/11/2023	ND	2.12	106	2.00	3.27		
Total Xylenes*	<0.150	0.150	02/11/2023	ND	6.37	106	6.00	3.93		
Total BTEX	<0.300	0.300	02/11/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/10/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/10/2023	ND	181	90.5	200	3.40		
DRO >C10-C28*	<10.0	10.0	02/10/2023	ND	190	95.0	200	2.35		
EXT DRO >C28-C36	<10.0	10.0	02/10/2023	ND						

Surrogate: 1-Chlorooctane 91.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
 HADLIE GREEN
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	02/08/2023	Sampling Date:	02/07/2023
Reported:	02/13/2023	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - LEA COUNTY, NM		

Sample ID: SS 14 (H230570-05)

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	02/11/2023	ND	2.07	104	2.00	0.347		
Toluene*	<0.050	0.050	02/11/2023	ND	2.16	108	2.00	3.81		
Ethylbenzene*	<0.050	0.050	02/11/2023	ND	2.12	106	2.00	3.27		
Total Xylenes*	<0.150	0.150	02/11/2023	ND	6.37	106	6.00	3.93		
Total BTEX	<0.300	0.300	02/11/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	02/10/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/10/2023	ND	181	90.5	200	3.40		
DRO >C10-C28*	<10.0	10.0	02/10/2023	ND	190	95.0	200	2.35		
EXT DRO >C28-C36	<10.0	10.0	02/10/2023	ND						

Surrogate: 1-Chlorooctane 97.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 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
 HADLIE GREEN
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	02/08/2023	Sampling Date:	02/07/2023
Reported:	02/13/2023	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - LEA COUNTY, NM		

Sample ID: SS 15 (H230570-06)

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	02/11/2023	ND	2.07	104	2.00	0.347	
Toluene*	<0.050	0.050	02/11/2023	ND	2.16	108	2.00	3.81	
Ethylbenzene*	<0.050	0.050	02/11/2023	ND	2.12	106	2.00	3.27	
Total Xylenes*	<0.150	0.150	02/11/2023	ND	6.37	106	6.00	3.93	
Total BTEX	<0.300	0.300	02/11/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	02/10/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/10/2023	ND	181	90.5	200	3.40	
DRO >C10-C28*	<10.0	10.0	02/10/2023	ND	190	95.0	200	2.35	
EXT DRO >C28-C36	<10.0	10.0	02/10/2023	ND					

Surrogate: 1-Chlorooctane 94.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 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
 HADLIE GREEN
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	02/08/2023	Sampling Date:	02/07/2023
Reported:	02/13/2023	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - LEA COUNTY, NM		

Sample ID: SS 16 (H230570-07)

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	02/11/2023	ND	2.07	104	2.00	0.347	
Toluene*	<0.050	0.050	02/11/2023	ND	2.16	108	2.00	3.81	
Ethylbenzene*	<0.050	0.050	02/11/2023	ND	2.12	106	2.00	3.27	
Total Xylenes*	<0.150	0.150	02/11/2023	ND	6.37	106	6.00	3.93	
Total BTEX	<0.300	0.300	02/11/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/10/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/10/2023	ND	181	90.5	200	3.40	
DRO >C10-C28*	<10.0	10.0	02/10/2023	ND	190	95.0	200	2.35	
EXT DRO >C28-C36	<10.0	10.0	02/10/2023	ND					

Surrogate: 1-Chlorooctane 92.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 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
 HADLIE GREEN
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	02/08/2023	Sampling Date:	02/07/2023
Reported:	02/13/2023	Sampling Type:	Soil
Project Name:	MESA B EAST	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - LEA COUNTY, NM		

Sample ID: SS 17 (H230570-08)

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/11/2023	ND	2.07	104	2.00	0.347	
Toluene*	<0.050	0.050	02/11/2023	ND	2.16	108	2.00	3.81	
Ethylbenzene*	<0.050	0.050	02/11/2023	ND	2.12	106	2.00	3.27	
Total Xylenes*	<0.150	0.150	02/11/2023	ND	6.37	106	6.00	3.93	
Total BTEX	<0.300	0.300	02/11/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/10/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/10/2023	ND	181	90.5	200	3.40	
DRO >C10-C28*	<10.0	10.0	02/10/2023	ND	190	95.0	200	2.35	
EXT DRO >C28-C36	<10.0	10.0	02/10/2023	ND					

Surrogate: 1-Chlorooctane 93.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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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		BILL TO		ANALYSIS REQUEST					
Project Manager: St Hudlie Green		P.O. #:							
Address: 3122 National Parks Hwy		Company: BTA Oil							
City: Carlsbad State: NM Zip: 88220		Attn: Bob Hall							
Phone #: 432 557 8895 Fax #:		Address: 1045 Pecos St							
Project #: 03C2012017 Project Owner:		City: Midland							
Project Name: Mesa B East		State: TX Zip: 79701							
Project Location: Lea County, NM		Phone #: 432-312-2203							
Sampler Name: Dmitriy Viktorov		Fax #:							

FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(GRAB OR (C)OMP. # CONTAINERS	MATRIX					PRESERV.		SAMPLING					
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	CHL	BTEX
	H230570	SS10	1			Y						02107	0930	✓	✓	✓
	1	SS11											0935			
	2	SS12											0940			
	3	SS13											0945			
	4	SS14											1010			
	5	SS15											1015			
	6	SS16											1020			
	7	SS17											1025	✓	✓	✓
	8															

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Relinquished By:	Date: 2-8-23 Time: 1445	Received By: <i>S. Keene</i>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date:	Received By:	REMARKS:
Delivered By: (Circle One)	Observed Temp. °C: 25.2	Sample Condition: Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
Sampler - UPS - Bus - Other:	Corrected Temp. °C: 1.9	CHECKED BY: (initials) <i>SK</i>	Bacteria (only) Sample Condition: Cool Intact Observed Temp. °C <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
			Thermometer ID #113 Correction Factor -0.6°C

FORM-006 R 3.3 07/18/22

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



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

March 06, 2023

HADLIE GREEN

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: MESA B EAST POLY LINE WELD FAILURE

Enclosed are the results of analyses for samples received by the laboratory on 03/01/23 13:35.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 05 A 0.5' (H230957-01)

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	03/02/2023	ND	2.10	105	2.00	0.912	
Toluene*	<0.050	0.050	03/02/2023	ND	2.06	103	2.00	3.81	
Ethylbenzene*	<0.050	0.050	03/02/2023	ND	2.19	110	2.00	4.67	
Total Xylenes*	<0.150	0.150	03/02/2023	ND	6.73	112	6.00	5.20	
Total BTEX	<0.300	0.300	03/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 123 % 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	160	16.0	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 06 A 0.5' (H230957-02)

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	03/02/2023	ND	2.10	105	2.00	0.912	
Toluene*	<0.050	0.050	03/02/2023	ND	2.06	103	2.00	3.81	
Ethylbenzene*	<0.050	0.050	03/02/2023	ND	2.19	110	2.00	4.67	
Total Xylenes*	<0.150	0.150	03/02/2023	ND	6.73	112	6.00	5.20	
Total BTEX	<0.300	0.300	03/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 123 % 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	880	16.0	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 07 A 0.5' (H230957-03)

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	03/02/2023	ND	2.10	105	2.00	0.912	
Toluene*	<0.050	0.050	03/02/2023	ND	2.06	103	2.00	3.81	
Ethylbenzene*	<0.050	0.050	03/02/2023	ND	2.19	110	2.00	4.67	
Total Xylenes*	<0.150	0.150	03/02/2023	ND	6.73	112	6.00	5.20	
Total BTEX	<0.300	0.300	03/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 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	1600	16.0	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 10 A 0.5' (H230957-04)

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	03/02/2023	ND	2.10	105	2.00	0.912	
Toluene*	<0.050	0.050	03/02/2023	ND	2.06	103	2.00	3.81	
Ethylbenzene*	<0.050	0.050	03/02/2023	ND	2.19	110	2.00	4.67	
Total Xylenes*	<0.150	0.150	03/02/2023	ND	6.73	112	6.00	5.20	
Total BTEX	<0.300	0.300	03/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 142 % 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	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 12 A 0.5' (H230957-05)

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	03/02/2023	ND	2.10	105	2.00	0.912	
Toluene*	<0.050	0.050	03/02/2023	ND	2.06	103	2.00	3.81	
Ethylbenzene*	<0.050	0.050	03/02/2023	ND	2.19	110	2.00	4.67	
Total Xylenes*	<0.150	0.150	03/02/2023	ND	6.73	112	6.00	5.20	
Total BTEX	<0.300	0.300	03/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 127 % 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	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 08 A 0.5' (H230957-06)

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	03/03/2023	ND	2.10	105	2.00	0.912	
Toluene*	<0.050	0.050	03/03/2023	ND	2.06	103	2.00	3.81	
Ethylbenzene*	<0.050	0.050	03/03/2023	ND	2.19	110	2.00	4.67	
Total Xylenes*	<0.150	0.150	03/03/2023	ND	6.73	112	6.00	5.20	
Total BTEX	<0.300	0.300	03/03/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 122 % 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	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 15 A 1' (H230957-07)

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	03/03/2023	ND	2.10	105	2.00	0.912	
Toluene*	<0.050	0.050	03/03/2023	ND	2.06	103	2.00	3.81	
Ethylbenzene*	<0.050	0.050	03/03/2023	ND	2.19	110	2.00	4.67	
Total Xylenes*	<0.150	0.150	03/03/2023	ND	6.73	112	6.00	5.20	
Total BTEX	<0.300	0.300	03/03/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 130 % 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	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 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
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 09 A 0.5' (H230957-08)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/03/2023	ND	2.10	105	2.00	0.912	
Toluene*	<0.050	0.050	03/03/2023	ND	2.06	103	2.00	3.81	
Ethylbenzene*	<0.050	0.050	03/03/2023	ND	2.19	110	2.00	4.67	
Total Xylenes*	<0.150	0.150	03/03/2023	ND	6.73	112	6.00	5.20	
Total BTEX	<0.300	0.300	03/03/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 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	992	16.0	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Notes and Definitions

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

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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

BILL TO

ANALYSIS REQUEST

Company Name: Ensolum, LLC
 Project Manager: Hadlie Green
 Address: 601 N. Warrenfeld St. Suit 400
 City: Midland State: TX Zip: 79701
 Phone #: 432.557.8895 Fax #:
 Project #: 03C2012017 Project Owner:
 Project Name: Mesa B East Poly Line Weld Failure
 Project Location: 32,060183-103.604972
 Sampler Name: Peter Van Patten
 P.O. #:
 Company: BTA Oil
 Attn: Bob Hall
 Address: 104 S. Feas St.
 City: Midland State: TX Zip: 79701
 Phone #: 432-312-2203 Fax #:
 MATRIX: GROUNDWATER, WASTEWATER, SOIL, OIL, SLUDGE, OTHER:
 PRESERV: ICE / COOL, OTHER:
 SAMPLING: DATE, TIME

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV	SAMPLING	DATE	TIME	ANALYSIS
H236957	5505A	0.5'	C	1	X	X	X	2-27-23	830	Chlorides (EPA: 300) 4500
	5506A								840	
	5507A								850	TPH (8015)
	5510A								900	
	5512A								910	
	5508A								920	
	5515A								930	
	5509A								940	BTEX (8021)

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Relinquished By: [Signature]
 Date: 3-23
 Time: 1:35
 Received By: [Signature]
 Date:
 Time:
 Delivered By: (Circle One) Observed Temp. °C: 3.5°C Sample Condition: Cool Intact Yes Yes No No
 Corrected Temp. °C: 2.9°C
 CHECKED BY: [Signature] (Initials)
 Turnaround Time: Standard Rush
 Thermometer ID #113 Bacteria (only) Sample Condition: Cool Intact Yes Yes No No
 Corrected Factor: 0.5°C
 Verbal Result: Yes No Add'l Phone #:
 All Results are emailed. Please provide Email address:
 REMARKS: h.green@ensolum.com, Kitchings@ensolum.com

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



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

March 06, 2023

HADLIE GREEN

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: MESA B EAST POLY LINE WELD FAILURE

Enclosed are the results of analyses for samples received by the laboratory on 03/01/23 13:35.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 06 B 2.0' (H230958-01)

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	03/02/2023	ND	2.07	103	2.00	1.12	
Toluene*	<0.050	0.050	03/02/2023	ND	2.05	102	2.00	0.409	
Ethylbenzene*	<0.050	0.050	03/02/2023	ND	2.05	103	2.00	0.409	
Total Xylenes*	<0.150	0.150	03/02/2023	ND	6.23	104	6.00	1.89	
Total BTEX	<0.300	0.300	03/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 116 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 07 B 2.0' (H230958-02)

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	03/02/2023	ND	2.07	103	2.00	1.12	
Toluene*	<0.050	0.050	03/02/2023	ND	2.05	102	2.00	0.409	
Ethylbenzene*	<0.050	0.050	03/02/2023	ND	2.05	103	2.00	0.409	
Total Xylenes*	<0.150	0.150	03/02/2023	ND	6.23	104	6.00	1.89	
Total BTEX	<0.300	0.300	03/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	544	16.0	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 HADLIE GREEN
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/01/2023	Sampling Date:	02/27/2023
Reported:	03/06/2023	Sampling Type:	Soil
Project Name:	MESA B EAST POLY LINE WELD FAILURE	Sampling Condition:	Cool & Intact
Project Number:	03C2012017	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.060183,-103.604972		

Sample ID: SS 09 B 1.5' (H230958-03)

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	03/02/2023	ND	2.07	103	2.00	1.12	
Toluene*	<0.050	0.050	03/02/2023	ND	2.05	102	2.00	0.409	
Ethylbenzene*	<0.050	0.050	03/02/2023	ND	2.05	103	2.00	0.409	
Total Xylenes*	<0.150	0.150	03/02/2023	ND	6.23	104	6.00	1.89	
Total BTEX	<0.300	0.300	03/02/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	03/02/2023	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	03/02/2023	ND	223	112	200	7.63	
DRO >C10-C28*	<10.0	10.0	03/02/2023	ND	213	107	200	9.33	
EXT DRO >C28-C36	<10.0	10.0	03/02/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



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April 04, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA B EAST POLY LINE WELD FAILURE

Enclosed are the results of analyses for samples received by the laboratory on 03/29/23 13:08.

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

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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,

Celey D. Keene

Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS 05 B @ 4'	H231434-01	Soil	29-Mar-23 10:10	29-Mar-23 13:08
SS 06 C @ 4'	H231434-02	Soil	29-Mar-23 10:15	29-Mar-23 13:08
SS 07 C @ 4'	H231434-03	Soil	29-Mar-23 10:20	29-Mar-23 13:08
SS 09 C @ 4'	H231434-04	Soil	29-Mar-23 10:25	29-Mar-23 13:08
SS 10 B @ 4'	H231434-05	Soil	29-Mar-23 10:30	29-Mar-23 13:08
SS 12 B @ 4'	H231434-06	Soil	29-Mar-23 10:35	29-Mar-23 13:08
SS 08 B @ 4'	H231434-07	Soil	29-Mar-23 10:40	29-Mar-23 13:08
SS 15 B @ 4'	H231434-08	Soil	29-Mar-23 10:45	29-Mar-23 13:08

04/04/23 - Client changed the sample IDs on -02, -03 and -04 (see COC). This is the revised report and will replace the one sent on 04/03/23.

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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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**SS 05 B @ 4'
H231434-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	112		16.0	mg/kg	4	3033044	AC	31-Mar-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3033001	JH	30-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			89.4 %		71.5-134	3033001	JH	30-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	

Surrogate: 1-Chlorooctane			120 %		48.2-134	3033008	MS	30-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			127 %		49.1-148	3033008	MS	30-Mar-23	8015B	
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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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**SS 06 C @ 4'
H231434-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	112		16.0	mg/kg	4	3033044	AC	31-Mar-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3033001	JH	30-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			91.3 %	71.5-134		3033001	JH	30-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	

Surrogate: 1-Chlorooctane			96.3 %	48.2-134		3033008	MS	30-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			104 %	49.1-148		3033008	MS	30-Mar-23	8015B	
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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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SS 07 C @ 4'
H231434-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	16.0		16.0	mg/kg	4	3033044	AC	31-Mar-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3033001	JH	30-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3033001	JH	30-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			89.9 %	71.5-134		3033001	JH	30-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			86.1 %	48.2-134		3033008	MS	30-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			92.1 %	49.1-148		3033008	MS	30-Mar-23	8015B	
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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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**SS 09 C @ 4'
H231434-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	<16.0		16.0	mg/kg	4	3033044	AC	31-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	QR-03
Ethylbenzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	QR-03
Total Xylenes*	<0.150		0.150	mg/kg	50	3033002	JH	31-Mar-23	8021B	QR-03
Total BTEX	<0.300		0.300	mg/kg	50	3033002	JH	31-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			95.0 %	71.5-134		3033002	JH	31-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	

Surrogate: 1-Chlorooctane			77.2 %	48.2-134		3033008	MS	30-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			81.4 %	49.1-148		3033008	MS	30-Mar-23	8015B	
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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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**SS 10 B @ 4'
H231434-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	3033044	AC	31-Mar-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3033002	JH	31-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			93.4 %	71.5-134		3033002	JH	31-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			77.7 %	48.2-134		3033008	MS	30-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			82.8 %	49.1-148		3033008	MS	30-Mar-23	8015B	
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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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SS 12 B @ 4'
H231434-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	16.0		16.0	mg/kg	4	3033044	AC	31-Mar-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3033002	JH	31-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			94.7 %	71.5-134		3033002	JH	31-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			83.0 %	48.2-134		3033008	MS	30-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			88.0 %	49.1-148		3033008	MS	30-Mar-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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SS 08 B @ 4'
H231434-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	32.0		16.0	mg/kg	4	3033044	AC	31-Mar-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3033002	JH	31-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			96.3 %	71.5-134		3033002	JH	31-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3033107	MS	31-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3033107	MS	31-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3033107	MS	31-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			96.1 %	48.2-134		3033107	MS	31-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			105 %	49.1-148		3033107	MS	31-Mar-23	8015B	
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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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**SS 15 B @ 4'
H231434-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	<16.0		16.0	mg/kg	4	3033044	AC	31-Mar-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3033002	JH	31-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3033002	JH	31-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			96.1 %	71.5-134		3033002	JH	31-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3033008	MS	30-Mar-23	8015B	

Surrogate: 1-Chlorooctane			72.3 %	48.2-134		3033008	MS	30-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			78.7 %	49.1-148		3033008	MS	30-Mar-23	8015B	
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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3033044 - 1:4 DI Water										
Blank (3033044-BLK1)										
Prepared & Analyzed: 30-Mar-23										
Chloride	ND	16.0	mg/kg							
LCS (3033044-BS1)										
Prepared & Analyzed: 30-Mar-23										
Chloride	416	16.0	mg/kg	400		104	80-120			
LCS Dup (3033044-BSD1)										
Prepared & Analyzed: 30-Mar-23										
Chloride	432	16.0	mg/kg	400		108	80-120	3.77	20	

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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3033001 - Volatiles

Blank (3033001-BLK1)

Prepared & Analyzed: 30-Mar-23

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	ND		mg/kg	0.0500		89.6	71.5-134			

LCS (3033001-BS1)

Prepared & Analyzed: 30-Mar-23

Benzene	1.88	0.050	mg/kg	2.00		93.9	81.4-118			
Toluene	1.85	0.050	mg/kg	2.00		92.6	88.7-121			
Ethylbenzene	1.84	0.050	mg/kg	2.00		91.8	86.1-120			
m,p-Xylene	3.60	0.100	mg/kg	4.00		90.1	88.2-124			
o-Xylene	1.81	0.050	mg/kg	2.00		90.7	84.9-118			
Total Xylenes	5.42	0.150	mg/kg	6.00		90.3	87.3-122			
Surrogate: 4-Bromofluorobenzene (PID)	0.0445		mg/kg	0.0500		88.9	71.5-134			

LCS Dup (3033001-BS1)

Prepared & Analyzed: 30-Mar-23

Benzene	1.94	0.050	mg/kg	2.00		97.0	81.4-118	3.23	15.8	
Toluene	1.90	0.050	mg/kg	2.00		95.1	88.7-121	2.63	15.9	
Ethylbenzene	1.85	0.050	mg/kg	2.00		92.5	86.1-120	0.769	16	
m,p-Xylene	3.61	0.100	mg/kg	4.00		90.3	88.2-124	0.234	16.2	
o-Xylene	1.81	0.050	mg/kg	2.00		90.5	84.9-118	0.253	16.7	
Total Xylenes	5.42	0.150	mg/kg	6.00		90.4	87.3-122	0.0711	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0452		mg/kg	0.0500		90.3	71.5-134			

Batch 3033002 - Volatiles

Blank (3033002-BLK1)

Prepared: 30-Mar-23 Analyzed: 31-Mar-23

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							

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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3033002 - Volatiles

Blank (3033002-BLK1)

Prepared: 30-Mar-23 Analyzed: 31-Mar-23

Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	ND		mg/kg	0.0500		94.2	71.5-134			

LCS (3033002-BS1)

Prepared: 30-Mar-23 Analyzed: 31-Mar-23

Benzene	1.92	0.050	mg/kg	2.00		96.0	81.4-118			
Toluene	1.91	0.050	mg/kg	2.00		95.4	88.7-121			
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.5	86.1-120			
m,p-Xylene	3.70	0.100	mg/kg	4.00		92.5	88.2-124			
o-Xylene	1.88	0.050	mg/kg	2.00		93.8	84.9-118			
Total Xylenes	5.58	0.150	mg/kg	6.00		92.9	87.3-122			
Surrogate: 4-Bromofluorobenzene (PID)	0.0452		mg/kg	0.0500		90.4	71.5-134			

LCS Dup (3033002-BSD1)

Prepared: 30-Mar-23 Analyzed: 31-Mar-23

Benzene	1.82	0.050	mg/kg	2.00		90.8	81.4-118	5.48	15.8	
Toluene	1.78	0.050	mg/kg	2.00		89.2	88.7-121	6.65	15.9	
Ethylbenzene	1.78	0.050	mg/kg	2.00		89.1	86.1-120	5.88	16	
m,p-Xylene	3.50	0.100	mg/kg	4.00		87.4	88.2-124	5.69	16.2	BS-3
o-Xylene	1.76	0.050	mg/kg	2.00		87.9	84.9-118	6.50	16.7	
Total Xylenes	5.25	0.150	mg/kg	6.00		87.6	87.3-122	5.96	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0468		mg/kg	0.0500		93.5	71.5-134			

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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3033008 - General Prep - Organics

Blank (3033008-BLK1)		Prepared & Analyzed: 30-Mar-23								
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	42.7		mg/kg	50.0		85.3	48.2-134			
Surrogate: 1-Chlorooctadecane	46.4		mg/kg	50.0		92.9	49.1-148			

LCS (3033008-BS1)		Prepared & Analyzed: 30-Mar-23								
GRO C6-C10	207	10.0	mg/kg	200		103	78.5-124			
DRO >C10-C28	217	10.0	mg/kg	200		108	72.5-126			
Total TPH C6-C28	423	10.0	mg/kg	400		106	77.6-123			
Surrogate: 1-Chlorooctane	47.1		mg/kg	50.0		94.1	48.2-134			
Surrogate: 1-Chlorooctadecane	48.0		mg/kg	50.0		95.9	49.1-148			

LCS Dup (3033008-BSD1)		Prepared: 30-Mar-23 Analyzed: 31-Mar-23								
GRO C6-C10	170	10.0	mg/kg	200		85.0	78.5-124	19.4	17.7	QR-04
DRO >C10-C28	182	10.0	mg/kg	200		91.1	72.5-126	17.4	21	
Total TPH C6-C28	352	10.0	mg/kg	400		88.1	77.6-123	18.4	18.5	
Surrogate: 1-Chlorooctane	40.9		mg/kg	50.0		81.8	48.2-134			
Surrogate: 1-Chlorooctadecane	48.6		mg/kg	50.0		97.2	49.1-148			

Batch 3033107 - General Prep - Organics

Blank (3033107-BLK1)		Prepared & Analyzed: 31-Mar-23								
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	37.8		mg/kg	50.0		75.5	48.2-134			
Surrogate: 1-Chlorooctadecane	42.5		mg/kg	50.0		85.0	49.1-148			

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Analytical Results For:

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: MESA B EAST POLY LINE WELD FA Project Number: 03C2012017 Project Manager: HADLIE GREEN Fax To:	Reported: 04-Apr-23 09:03
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Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3033107 - General Prep - Organics

LCS (3033107-BS1)

Prepared & Analyzed: 31-Mar-23

GRO C6-C10	171	10.0	mg/kg	200		85.5	78.5-124			
DRO >C10-C28	169	10.0	mg/kg	200		84.3	72.5-126			
Total TPH C6-C28	340	10.0	mg/kg	400		84.9	77.6-123			
Surrogate: 1-Chlorooctane	45.4		mg/kg	50.0		90.8	48.2-134			
Surrogate: 1-Chlorooctadecane	48.3		mg/kg	50.0		96.5	49.1-148			

LCS Dup (3033107-BSD1)

Prepared & Analyzed: 31-Mar-23

GRO C6-C10	178	10.0	mg/kg	200		89.0	78.5-124	3.94	17.7	
DRO >C10-C28	173	10.0	mg/kg	200		86.4	72.5-126	2.51	21	
Total TPH C6-C28	351	10.0	mg/kg	400		87.7	77.6-123	3.23	18.5	
Surrogate: 1-Chlorooctane	43.0		mg/kg	50.0		86.0	48.2-134			
Surrogate: 1-Chlorooctadecane	44.4		mg/kg	50.0		88.9	49.1-148			

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Notes and Definitions

- QR-04 The RPD for the BS/BSD was outside of historical limits.
QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference.
BS-3 Blank spike recovery outside of lab established statistical limits, but still within method limits.
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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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC				BILL TO				ANALYSIS REQUEST															
Project Manager: Hadiie Green				P.O. #:																			
Address: 3122 Nat'l Parks Hwy				Company: BTA Oil																			
City: Carlsbad		State: NM		Zip: 88220		Attn: Bob Hall																	
Phone #: 432-557-8895		Fax #:		Address: 104 S Pecos St																			
Project #: 03C2012017		Project Owner:		City: Midland																			
Project Name: MESA B EAST POLY LINE WELD FAILURE				State: TX				Zip: 79701															
Project Location: 32-060183, -103-604972				Phone #: 432-312-2203																			
Sampler Name:				Fax #:																			
FOR LAB USE ONLY																							
Lab I.D.		Sample I.D.		G/RAB OR (C)OMP.		# CONTAINERS		MATRIX				PRESERV.		SAMPLING		BTEX		Chlorides		TPH			
								GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:				ACID/BASE: ICE/COOL OTHER:		DATE TIME									
H231434				G		1						<input checked="" type="checkbox"/>		3/29/23		1010		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
1		SS05B @ 4'																					
2		SS06RC																					
3		SS07RC																					
4		SS09RC																					
5		SS10B																					
6		SS12B																					
7		SS08B																					
8		SS15B																					

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

Relinquished By: [Signature]		Date: 3-29-23	Received By: [Signature]		Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:	
Time: 1308				All Results are emailed. Please provide Email address: tmorrissey@ensolum.com mroberts@ensolum.com hgreen@ensolum.com		
Relinquished By:		Date:	Received By:		REMARKS: Incident #: NAPP2232980823	
Time:						
Delivered By: (Circle One)	Observed Temp. °C 4.9	Sample Condition	CHECKED BY: (Initials) [Signature]		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Bacteria (only) Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C 4.3	<input checked="" type="checkbox"/> Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No			Thermometer ID #113 Correction Factor -0.5°C	<input type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No
						Observed Temp. °C
						Corrected Temp. °C

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



APPENDIX E
NMOCD Notifications

From: [Nobui, Jennifer, EMNRD](#)
To: [Hadlie Green](#)
Cc: [Bratcher, Michael, EMNRD](#); [Harimon, Jocelyn, EMNRD](#); [Hamlet, Robert, EMNRD](#)
Subject: FW: [EXTERNAL] BTA - Extension Request - Mesa B East Poly Line Weld Failure (Incident Number nAPP2232980823)
Date: Thursday, February 16, 2023 1:24:53 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

[**EXTERNAL EMAIL**]

Hello Hadlie,

OCD approves your request for a 30-day extension to March 24, 2023 to submit a remediation plan or closure report. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thanks,
Jennifer Nobui

From: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Sent: Thursday, February 16, 2023 10:29 AM
To: Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Subject: FW: [EXTERNAL] BTA - Extension Request - Mesa B East Poly Line Weld Failure (Incident Number nAPP2232980823)

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



From: Hadlie Green <hgreen@ensolum.com>
Sent: Wednesday, February 15, 2023 10:57 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Bob Hall <bhall@btaoil.com>; Tacoma Morrissey <tmorrissey@ensolum.com>
Subject: [EXTERNAL] BTA - Extension Request - Mesa B East Poly Line Weld Failure (Incident Number

nAPP2232980823)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

BTA is requesting an extension for the current deadline of February 22, 2023, for submitting a remediation work plan or closure report required in 19.15.29.12.B.(1) NMAC for Mesa B East Poly Line Weld Failure (Incident Number nAPP2232980823). The release was discovered on November 24, 2022. Initial site assessment activities and delineation activities are ongoing. In order to complete additional remediation activities and submit a remediation work plan or closure report, BTA requests a 30-day extension of this deadline until March 24, 2023.

Thank you,



Hadlie Green

Staff Geologist

432-557-8895

hgreen@ensolum.com

Ensolum, LLC

in f 

From: [Enviro, OCD, EMNRD](#)
To: [Hadlie Green](#)
Cc: [Hamlet, Robert, EMNRD](#); [Bratcher, Michael, EMNRD](#)
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of February 20th
Date: Thursday, February 16, 2023 11:32:36 AM
Attachments: [image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

[**EXTERNAL EMAIL**]

Hadlie,

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

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



From: Hadlie Green <hgreen@ensolum.com>
Sent: Wednesday, February 15, 2023 8:12 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; Bob Hall <bhall@btaoil.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of February 20th

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

BTA anticipates collecting confirmation samples at the following locations the week of February 20, 2023.

- RGA #1 / Incident Number NAPP2228347919
 - GPS: 32.30386, -104.05949
- Mesa B East Poly Line Weld Failure / Incident Number nAPP2232980823

GPS: 32.06018, -103.60497

Thank you,



Hadlie Green

Staff Geologist

432-557-8895

hgreen@ensolum.com

Ensolum, LLC

in f 

From: [Enviro, OCD, EMNRD](#)
To: [Hadlie Green](#)
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 02/27/2023
Date: Friday, February 24, 2023 2:45:46 PM
Attachments: [image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

[**EXTERNAL EMAIL**]

Hadie,

Please be aware that notification requirements are **two business days**, per rule. You may proceed on your schedule. This, and all correspondence, should be included in the closure report to insure inclusion in the project file.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
<http://www.emnrd.nm.gov>



From: Hadlie Green <hgreen@ensolum.com>
Sent: Friday, February 24, 2023 11:41 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; Bob Hall <bhall@btaoil.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 02/27/2023

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

BTA anticipates collecting confirmation samples at the following locations the week of February 27, 2023.

- RGA #1 / Incident Number NAPP2228347919
 - GPS: 32.30386, -104.05949
- Mesa B East Poly Line Weld Failure / Incident Number nAPP2232980823

- GPS: 32.06018, -103.60497
- Vaca Draw West TB / nAPP2300347524
 - GPS: 32.14046, -103.56478

Thank you,



Hadlie Green

Staff Geologist

432-557-8895

hgreen@ensolum.com

Ensolum, LLC

in f 



APPENDIX F

Final C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAPP2232980823
District RP	
Facility ID	fAPP2130022003
Application ID	

Release Notification

Responsible Party

Responsible Party: BTA Oil Producers, LLC	OGRID: 260297
Contact Name: Bob Hall	Contact Telephone: 432-682-3753
Contact email: bhall@btaoil.com	Incident # (assigned by OCD) nAPP2232980823
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

Location of Release Source

Latitude: 32.06018 Longitude: -103.60497

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Mesa B East Poly Line Weld Failure	Site Type: Tank Battery
Date Release Discovered: 11/24/2022	API# (if applicable) Nearest well:

Unit Letter	Section	Township	Range	County
A	7	26S	33E	Lea

Surface Owner: State Federal Tribal Private (Name:)

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 300 BBL	Volume Recovered (bbls) 15 BBL
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Equipment Failure

The factory weld on a Y-component of an 8" poly line leaked and spilled produced water outside of containment at the Mesa B East Tank Battery. Water went off pad, across pasture, and down a two-track road.

Spill calculation is attached.

Incident ID	nAPP2232980823
District RP	
Facility ID	fAPP2130022003
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Yes – Release greater than 25 BBL.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, via filing the NOR for the present Incident ID via the NMOCD Permitting Portal on 11/25/2022.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why: _____ _____
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: Bob Hall Title: Environmental Manager Signature: <u></u> Date: 12/9/2022 email: bhall@btaoil.com Telephone: 432-682-3753
<p><u>OCD Only</u></p> Received by: <u>Jocelyn Harimon</u> Date: <u>12/09/2022</u>

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

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS
 Action 165822

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 165822
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	12/9/2022

Incident ID	NAPP2232980823
District RP	
Facility ID	fAPP2130022003
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>51-100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	NAPP2232980823
District RP	
Facility ID	fAPP2130022003
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bob Hall Title: Environmental Manager
 Signature:  Date: 4/27/2023
 email: bhall@btaoil.com Telephone: 432-682-3753

OCD Only

Received by: Jocelyn Harimon Date: 04/28/2023

Form C-141

State of New Mexico
Oil Conservation Division

Page 6

Incident ID	NAPP2232980823
District RP	
Facility ID	fAPP2130022003
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Bob Hall Title: Environmental Manager
 Signature:  Date: 4/27/2023
 email: bhall@btaoil.com Telephone: 432-682-3753

OCD Only

Received by: Jocelyn Harimon Date: 04/28/2023

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by:  Date: 07/20/2023
 Printed Name: Nelson Velez Title: Environmental Specialist - Adv

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

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

CONDITIONS

Action 211280

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 211280
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvez	None	7/20/2023