



October 16, 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 #2 Tank Battery
Incident Number nAPP2113973789
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 #2 Tank Battery (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 historical 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 nAPP2113973789.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit P, Section 7, Township 26 South, Range 33 East, in Lea County, New Mexico (32.05100°, -103.60600°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On May 19, 2021, a stud sheared on the top cap of a pressure pump allowing produced water to spray from under the loosened cap. Approximately 45 barrels (bbls) of produced water sprayed onto the surface of the well pad. A vacuum truck was dispatched to the Site to recover free-standing fluids; approximately 33 bbls of released produced water were recovered. The saturated surface soil was scraped up during initial spill response activities. BTA reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on May 28, 2021. The release was assigned Incident Number nAPP2113973789.

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 New Mexico Office of the State Engineer (NMOSE) well C-04547, located approximately 0.2 miles north of the Site. The groundwater well was drilled during July 2021 for

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determination of regional groundwater depth. The well was drilled to a total depth of 112 feet bgs and has a recorded depth to groundwater of 89.5 feet bgs. The borehole was subsequently abandoned using hydrated bentonite chips. 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 is greater than 300 feet from the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (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

SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On August 25, 2023, Ensolum personnel were at the Site to evaluate the release extent based on information provided on the Form C-141, the documented release extent, and visual observations. Impacted soil was documented to have been scraped up during initial spill response activities. No visible indications of the historical release were observed during the Site visit. Six assessment soil samples (SS01 through SS10) were collected within and around the release extent, at a depth of approximately 0.5 feet bgs, to assess for the presence or absence of impacted soil resulting from the May 19, 2021, produced water 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 SS06, collected within the historical release extent, indicated all COC concentrations were compliant with the Site Closure Criteria. Laboratory analytical results for assessment samples SS07 through SS10, collected around the release extent, were compliant with the most stringent Table I Closure Criteria and confirmed the lateral extent of the release. Vertical delineation activities were warranted to further confirm the absence of impacted soil within the release area.

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DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On September 15, 2023, Ensolum personnel returned to the Site to complete vertical delineation activities to confirm the absence of impacted soil within the historical release area. Boreholes were advanced via hand auger at the location of assessment samples SS01 through SS06. The boreholes were advanced to depths ranging from 3 feet to 4 feet bgs. Soil from the boreholes was field screened for VOCs and chloride. Field screening results and observations from the boreholes were logged on lithologic/soil sampling logs, which are included in Appendix C. Discrete delineation soil samples were collected from the boreholes 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. 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 a photographic log is included in Appendix B.

Laboratory analytical results for the delineation soil samples indicated all COC concentrations were compliant with the Site Closure Criteria and provided vertical delineation to the most stringent Table I Closure Criteria at five locations within the release extent. Laboratory analytical results are summarized in Table 1 and the complete analytical reports are included as Appendix D.

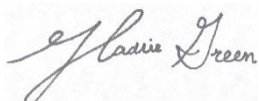
CLOSURE REQUEST

Site assessment and delineation activities were conducted at the Site to assess for the presence or absence of impacted soil resulting from the May 19, 2021, release of produced water. Laboratory analytical results for the delineation soil samples indicated all COC concentrations were compliant with the Site Closure Criteria and provided lateral and vertical delineation to the most stringent Table I Closure Criteria. Based on the laboratory analytical results, no impacted soil was identified and no further remediation is required.

Initial response efforts and natural attenuation have mitigated impacts at this Site. Depth to groundwater is greater than 51 feet bgs within 0.5 miles of the Site and no other sensitive receptors were identified near the release extent. BTA believes the remedial actions completed are protective of human health, the environment, and groundwater. As such, BTA respectfully requests closure for Incident Number nAPP2113973789. Notifications submitted to the NMOCD are included in Appendix E and the final Form C-141 is included in Appendix F.

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

Sincerely,
Ensolum, LLC



Hadlie Green
Project Geologist



Aimee Cole
Senior Managing Scientist

cc: Kelton Beaird, BTA
Bureau of Land Management

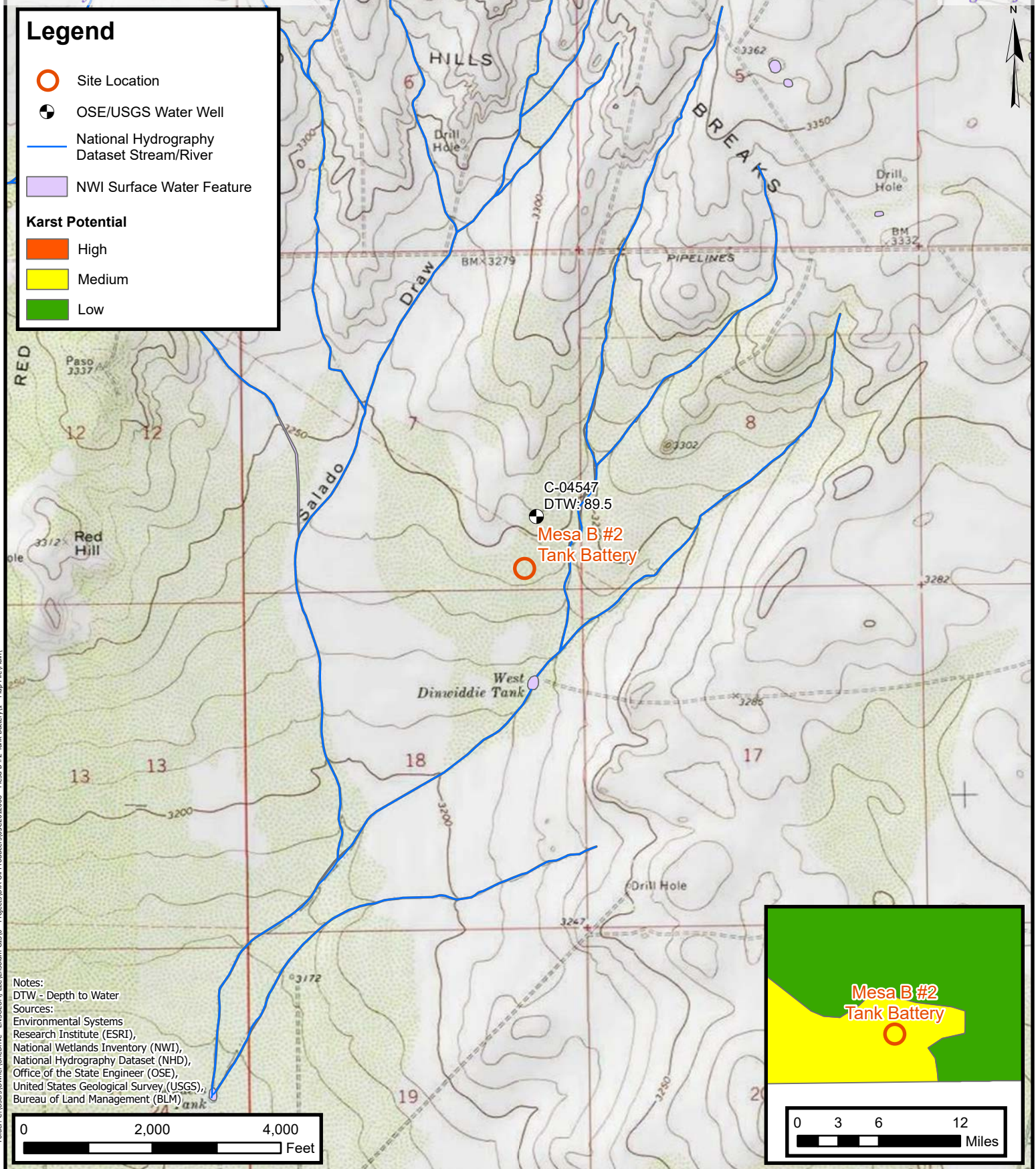
BTA Oil Producers, LLC
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Appendices:

Figure 1	Site Receptor Map
Figure 2	Assessment 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 Form C-141



FIGURES



Site Receptor Map

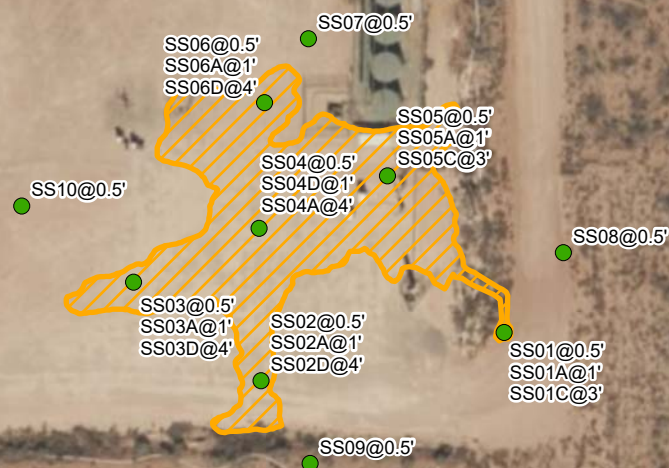
BTA Oil Producers
Mesa B #2 Tank Battery
Incident Number: nAPP2113973789
Unit P, Sec 7, T26S, R33E
Lea County, New Mexico

FIGURE

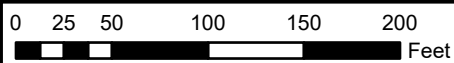
1

Legend

- Delineation Soil Sample
in Compliance with
Closure Criteria
- Release Extent



Notes:
Sample ID @ Depth Below Ground Surface.



Sources: Environmental Systems Research Institute (ESRI)



Assessment Soil Sample Locations

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Mesa B #2 Tank Battery
Incident Number: nAPP2113973789
Unit P, Sec 7, T26S, R33E
Lea County, New Mexico

FIGURE
2



TABLES



TABLE I SOIL SAMPLE ANALYTICAL RESULTS Mesa B #2 Tank Battery 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
Assessment and Delineation Soil Samples										
SS01	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SS01A	09/15/2023	1.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS01C	09/15/2023	3.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS02	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
SS02A	09/15/2023	1.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
SS02D	09/15/2023	4.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS03	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
SS03A	09/15/2023	1.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
SS03D	09/15/2023	4.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SS04	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	976
SS04A	09/15/2023	1.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	176
SS04D	09/15/2023	4.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS05	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	4,640
SS05A	09/15/2023	1.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	992
SS05C	09/15/2023	3.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	640
SS06	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS06A	09/15/2023	1.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS06D	09/15/2023	4.0	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS07	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS08	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS09	08/25/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS10	08/25/2023	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

NE: Not Established

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

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

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

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



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	MINUTES 32	SECONDS 3	14.34	N		
		LONGITUDE	103	36	16.96	W		
* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84								
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE 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	PAGE 1 OF 2

DSE DTI AUG 2 2021 PM4:44

4. HYDROGEOLOGIC LOG OF WELL	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
	FROM	TO				
	0	4	4	Caliche, Consolidated, White	Y ✓ N	
	4	44	40	Sand, Fine-grained, poorly graded, with caliche gravel, Redish Brown	Y ✓ N	
	44	51	7	Clay, Stiff, Dark Brown,	Y ✓ N	
	51	103	52	Sandstone, Fine-grained, poorly graded, Tan Brown	✓ Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER – SPECIFY:					TOTAL ESTIMATED WELL YIELD (gpm): 0.00	
5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.				
	MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring plugged using tremie pipe to total depth and landed cement slurry of <6.0 gallons of water per 94 lbs sack of Portland TYPE I/II Neat Cement. See attached Plugging Record					
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Shane Eldridge, Cameron Pruitt, Carmelo Trevino						
6. SIGNATURE	<div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 40%;"> <p style="margin: 0;">THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 60%;"> <p style="font-size: 1.2em; margin: 0;"><i>Jack Atkins</i></p> <p style="margin: 0;">SIGNATURE OF DRILLER / PRINT SIGNEE NAME</p> </div> <div style="width: 35%; text-align: right;"> <p style="margin: 0;">Jackie D. Atkins</p> <p style="margin: 0;">DATE</p> </div> </div> </div> <div style="width: 55%; text-align: right;"> <p style="margin: 0;">07/29/2021</p> </div> </div>					

FOR USE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 06/30/2017)	
FILE NO. C-4547	POD NO. 1	TRN NO.	
LOCATION 26S-33E-07 4-4-2	WELL TAG ID NO. NA	PAGE 2 OF 2	

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



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Groundwater levels for New Mexico

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❗ Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 320249103342101

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 320249103342101 26S.33E.09.443142

Lea County, New Mexico

Latitude 32°02'49", Longitude 103°34'21" NAD27

Land-surface elevation 3,283 feet above NAVD88

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

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1954-07-26			D	62610	3174.82	NGVD29	1	Z		
1954-07-26			D	62611	3176.40	NAVD88	1	Z		
1954-07-26			D	72019	106.60		1	Z		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929

Section	Code	Description
Status	1	Static
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

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[Subscribe for system changes](#)
[News](#)

[Accessibility](#) [FOIA](#) [Privacy](#) [Policies and Notices](#)
[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)
Title: Groundwater for New Mexico: Water Levels
URL: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>



Page Contact Information: [New Mexico Water Data Maintainer](#)
Page Last Modified: 2023-09-06 11:02:02 EDT
0.31 0.26 nadww02



APPENDIX B

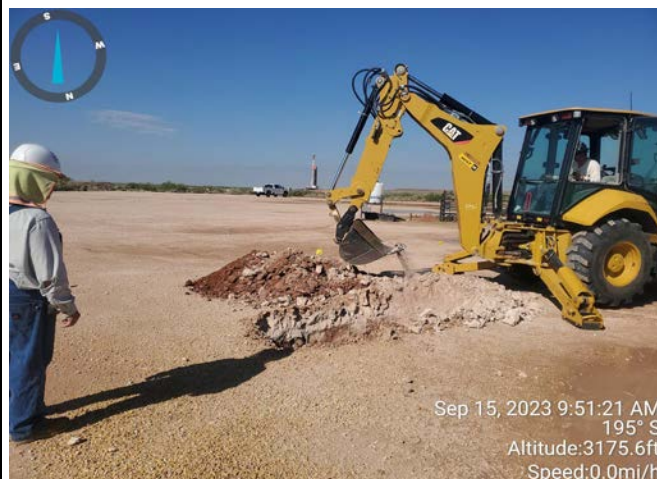
Photographic Log

**Photographic Log**

BTA Oil Producers, LLC
Mesa B #2 Tank Battery
nAPP2113973789



Photograph: 1 Date: 8/25/2023
Description: Assessment activities, release footprint
View: Northwest



Photograph: 2 Date: 9/15/2023
Description: Delineation with backhoe
View: Southwest



Photograph: 3 Date: 9/15/2023
Description: Delineation with Hand Auger
View: North





Photograph: 4 Date: 9/15/2023
Description: Delineation with Hand Auger
View: Northwest





APPENDIX C


Lithologic Soil Sampling Logs


								Sample Name: SS01		Date: 9/15/2023	
								Site Name: Mesa B #2 Tank Battery Pump Failure			
								Incident Number: nAPP2113973789			
								Job Number: 03C2012068			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Peter Van Patten		Method: Hand Auger	
Coordinates: 32.050972, -103.605609								Hole Diameter: ~4"		Total Depth: 3.0'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factors included. ND - NonDetect											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	229.6	0.6		SS01	0.5	0.5	SP-SM	SAND: Reddish brown, medium to fine grain, poorly sorted, no stain, no odor			
Wet	ND	0.0	N	SS01A	1	1	SP-SM	Sand: Reddish brown, medium to fine grain, poorly sorted, no stain, no odor			
Wet	ND	0.0	N	SS01B		2	SP-SM	SAA (same as above)			
Wet	ND	0.0	N	SS01C	3	3	SP-SM	SAA, some caliche gravel/cobbles TD (refusal) at 3 feet bgs			

								Sample Name: SS02		Date: 9/15/2023	
								Site Name: Mesa B #2 Tank Battery Pump Failure			
								Incident Number: nAPP2113973789			
								Job Number: 03C2012068			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Peter Van Patten		Method: Backhoe	
Coordinates: 32.050908, -103.606019								Hole Diameter: ~2'		Total Depth: 4.0'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included. ND - NonDetect											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	756	0.2	N	SS02	0.5	0.5	SP-SM	SAND, reddish brown, medium to fine grain, poorly sorted, no stain, no odor			
Damp	168	0.0	N	SS02A	1	1	SP-SM	Sand: Reddish brown, medium to fine grain, poorly sorted, no stain, no odor			
Damp	ND	0.0	N	SS02B		2	SP SM	SAA (same as above)			
Damp	ND	0.0	N	SS02C		3	SP-SM	SAA			
Damp	ND	0.0	N	SS02D	4	4	CHHE	Caliche: light tan, pinkish tan, subangular gravel-cobble, no stain, no odor TD at 4 feet bgs			

								Sample Name: SS03		Date: 9/15/2023	
								Site Name: Mesa B #2 Tank Battery Pump Failure			
								Incident Number: nAPP2113973789			
								Job Number: 03C2012068			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Peter Van Patten		Method: Backhoe	
Coordinates: 32.051051, -103.606231								Hole Diameter: ~2'		Total Depth: 4.0'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included. ND - NonDetect											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	392	0.3	N	SS03	0.5	0.5	SP-SM	SAND, reddish brown, medium to fine grain, poorly sorted, no stain, no odor			
Damp	308	0.0	N	SS03A	1	1	SP-SM	Sand: Reddish brown, medium to fine grain, poorly sorted, no stain, no odor			
Damp	ND	0.0	N	SS03B		2	SP SM	SAA (same as above)			
Damp	ND	0.0	N	SS03C		3	SP-SM	SAA			
Damp	ND	0.0	N	SS03D	4	4	CHHE	Caliche: light tan, pinkish tan, subangular gravel-cobble, no stain, no odor TD at 4 feet bgs			

 ENSOLUM								Sample Name: SS04		Date: 9/15/2023	
								Site Name: Mesa B #2 Tank Battery Pump Failure			
								Incident Number: nAPP2113973789			
								Job Number: 03C2012068			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Peter Van Patten		Method: Backhoe	
Coordinates: 32.051126, -103.606019								Hole Diameter: ~2'		Total Depth: 4.0'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included. ND - NonDetect											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	3,360	0.1	N	SS04	0.5	0.5	SP-SM	SAND, reddish brown, medium to fine grain, poorly sorted, no stain, no odor.			
Damp	190	0.0	N	SS04A	1	1	SP-SM	Sand: Reddish brown, medium to fine grain, poorly sorted, no stain, no odor			
Damp	ND	0.0	N	SS04B		2	SP SM	SAA (same as above)			
Damp	ND	0.0	N	SS04C		3	SP-SM	SAA			
Damp	ND	0.0	N	SS04D	4	4	SP-SM	SAA, some caliche TD at 4 feet bgs			

 ENSOLUM								Sample Name: SS05		Date: 9/15/2023	
								Site Name: Mesa B #2 Tank Battery Pump Failure			
								Incident Number: nAPP2113973789			
								Job Number: 03C2012068			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Peter Van Patten		Method: Hand Auger	
Coordinates: 32.051199, -103.605802								Hole Diameter: ~4"		Total Depth: 3.0'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included. ND - NonDetect											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	12,130	0.7	N	SS05	0.5	0.5	SP-SM	SAND, reddish brown, medium to fine grain, poorly sorted, caliche gravel mix, no stain, no odor			
Damp	1,204	0.0	N	SS05A	1	1	SP-SM	Sand: Reddish brown, medium to fine grain, poorly sorted, some caliche, no stain, no odor			
Damp	935	0.0	N	SS05B		2	SP SM	SAA (same as above), no caliche			
Damp	778	0.0	N	SS05C	3	3	SP-SM	SAA, some caliche gravel/cobbles TD (refusal) at 3 feet bgs			

								Sample Name: SS06		Date: 9/15/2023	
								Site Name: Mesa B #2 Tank Battery Pump Failure			
								Incident Number: nAPP2113973789			
								Job Number: 03C2012068			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Peter Van Patten		Method: Backhoe	
Coordinates: 32.051306, -103.606007								Hole Diameter: ~2'		Total Depth: 4.0'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included. ND - NonDetect											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	230	0.6	N	SS06	0.5	0.5	SP-SM	SAND, reddish brown, medium to fine grain, poorly sorted, some caliche, no stain, no odor			
Damp	ND	0.0	N	SS06A	1	1	SP-SM	Sand: Reddish brown, medium to fine grain, poorly sorted, no stain, no odor			
Damp	ND	0.0	N	SS06B		2	SP SM	SAA (same as above)			
Damp	ND	0.0	N	SS06C		3	SP-SM	SAA			
Damp	ND	0.0	N	SS06D	4	4	CHHE	Caliche: light tan, pinkish tan, subangular gravel-cobble, no stain, no odor TD at 4 feet bgs			



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



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

September 05, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA B #2 TANK BATTERY - PUMP FAILURE

Enclosed are the results of analyses for samples received by the laboratory on 08/29/23 13:00.

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 with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 01 0.5' (H234683-01)

BTX 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	08/31/2023	ND	1.83	91.3	2.00	1.62	
Toluene*	<0.050	0.050	08/31/2023	ND	1.85	92.4	2.00	2.01	
Ethylbenzene*	<0.050	0.050	08/31/2023	ND	1.87	93.7	2.00	1.40	
Total Xylenes*	<0.150	0.150	08/31/2023	ND	5.68	94.7	6.00	1.13	
Total BTX	<0.300	0.300	08/31/2023	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	64.0	16.0	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 97.5 % 48.2-134

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

Received:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 02 0.5' (H234683-02)

BTX 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	08/31/2023	ND	1.83	91.3	2.00	1.62		
Toluene*	<0.050	0.050	08/31/2023	ND	1.85	92.4	2.00	2.01		
Ethylbenzene*	<0.050	0.050	08/31/2023	ND	1.87	93.7	2.00	1.40		
Total Xylenes*	<0.150	0.150	08/31/2023	ND	5.68	94.7	6.00	1.13		
Total BTX	<0.300	0.300	08/31/2023	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	240	16.0	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 95.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 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:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 03 0.5' (H234683-03)

BTX 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	08/31/2023	ND	1.83	91.3	2.00	1.62		
Toluene*	<0.050	0.050	08/31/2023	ND	1.85	92.4	2.00	2.01		
Ethylbenzene*	<0.050	0.050	08/31/2023	ND	1.87	93.7	2.00	1.40		
Total Xylenes*	<0.150	0.150	08/31/2023	ND	5.68	94.7	6.00	1.13		
Total BTX	<0.300	0.300	08/31/2023	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	128	16.0	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 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:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 04 0.5' (H234683-04)

BTX 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	08/31/2023	ND	1.83	91.3	2.00	1.62	
Toluene*	<0.050	0.050	08/31/2023	ND	1.85	92.4	2.00	2.01	
Ethylbenzene*	<0.050	0.050	08/31/2023	ND	1.87	93.7	2.00	1.40	
Total Xylenes*	<0.150	0.150	08/31/2023	ND	5.68	94.7	6.00	1.13	
Total BTX	<0.300	0.300	08/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	976	16.0	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 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:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 05 0.5' (H234683-05)

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	08/31/2023	ND	1.83	91.3	2.00	1.62	
Toluene*	<0.050	0.050	08/31/2023	ND	1.85	92.4	2.00	2.01	
Ethylbenzene*	<0.050	0.050	08/31/2023	ND	1.87	93.7	2.00	1.40	
Total Xylenes*	<0.150	0.150	08/31/2023	ND	5.68	94.7	6.00	1.13	
Total BTEX	<0.300	0.300	08/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	4640	16.0	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 06 0.5' (H234683-06)

BTX 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	08/31/2023	ND	1.83	91.3	2.00	1.62		
Toluene*	<0.050	0.050	08/31/2023	ND	1.85	92.4	2.00	2.01		
Ethylbenzene*	<0.050	0.050	08/31/2023	ND	1.87	93.7	2.00	1.40		
Total Xylenes*	<0.150	0.150	08/31/2023	ND	5.68	94.7	6.00	1.13		
Total BTX	<0.300	0.300	08/31/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 93.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 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
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 07 0.5' (H234683-07)

BTX 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	08/31/2023	ND	1.83	91.3	2.00	1.62	
Toluene*	<0.050	0.050	08/31/2023	ND	1.85	92.4	2.00	2.01	
Ethylbenzene*	<0.050	0.050	08/31/2023	ND	1.87	93.7	2.00	1.40	
Total Xylenes*	<0.150	0.150	08/31/2023	ND	5.68	94.7	6.00	1.13	
Total BTX	<0.300	0.300	08/31/2023	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	<16.0	16.0	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 99.3 % 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:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 08 0.5' (H234683-08)

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/30/2023	ND	1.76	87.9	2.00	0.722	
Toluene*	<0.050	0.050	08/30/2023	ND	1.78	89.2	2.00	0.253	
Ethylbenzene*	<0.050	0.050	08/30/2023	ND	1.84	91.9	2.00	1.19	
Total Xylenes*	<0.150	0.150	08/30/2023	ND	5.40	90.0	6.00	2.13	
Total BTX	<0.300	0.300	08/30/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 91.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 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:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 09 0.5' (H234683-09)

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/30/2023	ND	1.76	87.9	2.00	0.722		
Toluene*	<0.050	0.050	08/30/2023	ND	1.78	89.2	2.00	0.253		
Ethylbenzene*	<0.050	0.050	08/30/2023	ND	1.84	91.9	2.00	1.19		
Total Xylenes*	<0.150	0.150	08/30/2023	ND	5.40	90.0	6.00	2.13		
Total BTX	<0.300	0.300	08/30/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 94.2 % 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
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	08/29/2023	Sampling Date:	08/25/2023
Reported:	09/05/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	32.05100,-103.60600		

Sample ID: SS 10 0.5' (H234683-10)

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/30/2023	ND	1.76	87.9	2.00	0.722		
Toluene*	<0.050	0.050	08/30/2023	ND	1.78	89.2	2.00	0.253		
Ethylbenzene*	<0.050	0.050	08/30/2023	ND	1.84	91.9	2.00	1.19		
Total Xylenes*	<0.150	0.150	08/30/2023	ND	5.40	90.0	6.00	2.13		
Total BTX	<0.300	0.300	08/30/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	08/30/2023	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	08/30/2023	ND	223	112	200	2.90	
DRO >C10-C28*	<10.0	10.0	08/30/2023	ND	222	111	200	0.250	
EXT DRO >C28-C36	<10.0	10.0	08/30/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 125 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Ensolum, LLC

Project Manager: Hadlie Green

Address: 3122 Nat'l Parks Hwy

City: Carlsbad State: NM Zip: 88220

Phone #: 432-557-8895 Fax #:

Project #: 03C2012068 Project Owner:

Project Name: Mesa B #2 Tank Battery - Pump Failure

Project Location: 32.05100, -103.60600

Sampler Name: Meredith Roberts

FOR LAB USE ONLY

Lab I.D. Sample I.D.

Depth (feet)

1 0.5' (G)RAB OR (C)OMP. # CONTAINERS

2 SS01 G 1 GROUNDWATER

3 SS02 WASTEWATER

4 SS03 SOIL

5 SS04 OIL

6 SS05 SLUDGE

7 SS06 OTHER :

8 SS07 ACID/BASE:

9 SS08 ICE / COOL

10 SS09 OTHER :

11 SS10 DATE TIME

12 BTEX

13 Chlorides

14 TPH

15

16

17

18

BILL TO

P.O. #:

Company: BTA Oil

Attn: Kelson Beard

Address: 104 S Red St

City: Midland

State: TX Zip: 79701

Phone #: 432-312-2203

Fax #:

ANALYSIS REQUEST

PLEASE NOTE: Liability and Damages. Cardinal's liability and claims are limited to the amount paid by the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 90 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruption, 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:

Hadlie Green

Relinquished By:

Meredith Roberts

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Observed Temp.: °C

Corrected Temp.: °C

Sample Condition

Cool Intact

CHECKED BY:

(Initials)

Turnaround Time:

Standard

Thermometer ID #113

Corrosion Factor 0.5°C

Bacteria (only)

Cool Intact

Sample Condition

Observed Temp.: °C

Corrected Temp.: °C

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

All Results are emailed. Please provide Email address:

hgreene@ensolum.com

meredith@ensolum.com

REMARKS:

Incident #: NAPP2113973789

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



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

September 21, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA B #2 TANK BATTERY - PUMP FAILURE

Enclosed are the results of analyses for samples received by the laboratory on 09/19/23 14:19.

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, flowing style.

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:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 01 A 1' (H235052-01)

BTX 8021B			mg/kg		Analyzed By: JH				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/20/2023	ND	1.97	98.4	2.00	1.37	
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70	
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14	
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07	
Total BTX	<0.300	0.300	09/20/2023	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	<16.0	16.0	09/20/2023	ND	448	112	400	0.00	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 93.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.3 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 01 C 3' (H235052-02)

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	09/20/2023	ND	1.97	98.4	2.00	1.37	
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70	
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14	
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07	
Total BTEX	<0.300	0.300	09/20/2023	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	09/20/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 92.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.7 % 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:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 02 A 1' (H235052-03)

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	09/20/2023	ND	1.97	98.4	2.00	1.37	
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70	
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14	
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07	
Total BTEX	<0.300	0.300	09/20/2023	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	112	16.0	09/20/2023	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 90.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 02 D 4' (H235052-04)

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	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEX	<0.300	0.300	09/20/2023	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	80.0	16.0	09/20/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 86.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.3 % 49.1-148

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Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 03 A 1' (H235052-05)

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	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEx	<0.300	0.300	09/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	288	16.0	09/20/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 93.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.4 % 49.1-148

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Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 03 D 4' (H235052-06)

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	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEX	<0.300	0.300	09/20/2023	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	64.0	16.0	09/20/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 85.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 04 A 1' (H235052-07)

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	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEX	<0.300	0.300	09/20/2023	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	176	16.0	09/20/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 83.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.2 % 49.1-148

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Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 04 D 4' (H235052-08)

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	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEX	<0.300	0.300	09/20/2023	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	09/20/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 89.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.9 % 49.1-148

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Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 05 A 1' (H235052-09)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEx	<0.300	0.300	09/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	09/20/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 77.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 05 C 3' (H235052-10)

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	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEX	<0.300	0.300	09/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	640	16.0	09/20/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 73.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.7 % 49.1-148

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Analytical Results For:

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 06 A 1' (H235052-11)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEX	<0.300	0.300	09/20/2023	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	48.0	16.0	09/20/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

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

Received:	09/19/2023	Sampling Date:	09/15/2023
Reported:	09/21/2023	Sampling Type:	Soil
Project Name:	MESA B #2 TANK BATTERY - PUMP FAIL	Sampling Condition:	Cool & Intact
Project Number:	03C2012068	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA (32.051,-103.606)		

Sample ID: SS 06 D 4' (H235052-12)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/20/2023	ND	1.97	98.4	2.00	1.37		
Toluene*	<0.050	0.050	09/20/2023	ND	2.13	107	2.00	4.70		
Ethylbenzene*	<0.050	0.050	09/20/2023	ND	2.28	114	2.00	6.14		
Total Xylenes*	<0.150	0.150	09/20/2023	ND	6.79	113	6.00	5.07		
Total BTEX	<0.300	0.300	09/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	09/20/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2023	ND	210	105	200	8.43	
DRO >C10-C28*	<10.0	10.0	09/20/2023	ND	194	97.1	200	1.13	
EXT DRO >C28-C36	<10.0	10.0	09/20/2023	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

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

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

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC		BILL TO		ANALYSIS REQUEST														
Project Manager: Hadlie Green		P.O. #:																
Address: 601 N Marland Street, Suite 400		Company: BTA Oil																
City: Midland		Attn: Kelton Beard																
State: TX Zip: 79701		Address: 104 S Pecos St																
Phone #: 432-557-8895		City: Midland																
Fax #:		State: TX Zip: 79701																
Project #: 03C2012068		Project Owner:																
Project Name: Mesa B #2 Tank Battery Pump Failure		State: TX Zip: 79701																
Project Location: 32.051, -103.600		Phone #: 432-312-2203																
Sampler Name: Peter Van Patten		Fax #:																
FOR LAB USE ONLY		PRESERV.		SAMPLING														
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					DATE					TIME	TPH	BTEX	Chlorides
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :					
1035003	SS01A	1	C	1	✓									9/15/23	1105	X	X	X
	SS01C	3	C	1	✓										1115	X	X	X
	SS02A	1	C	1	✓										1045	X	X	X
	SS02D	4	C	1	✓										1100	X	X	X
	SS03A	1	C	1	✓										1025	X	X	X
	SS03D	4	C	1	✓										1040	X	X	X
	SS04A	1	C	1	✓										1005	X	X	X
	SS04D	4	C	1	✓										1020	X	X	X
	SS05A	1	C	1	✓										1120	X	X	X
	SS05C	3	C	1	✓										1130	X	X	X
PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising whether stated 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 rendered by Cardinal, regardless of whether such claim is based upon any of the above stated releases or otherwise.																		
Relinquished By: <i>[Signature]</i>		Date: 9/19/23		Time: 1119		Received By: <i>[Signature]</i>		Date: 9/19/23		Time: 1130		REMARKS: <i>h.green@ensolum.com</i>						
Delivered By: (Circle One)		Observed Temp.: °C		Corrected Temp.: °C		Sample Condition		CHECKED BY: (Initials)		Turnaround Time:		Standard <i>Rush</i>						
Sampler - UPS - Bus - Other:		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		Bacteria (only) <input checked="" type="checkbox"/>		Sample Condition						
		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Observed Temp.: °C						
		Corrected Temp.: °C								Corrected Temp.: °C								

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



APPENDIX E

NMOCD Notifications

From: [Wells, Shelly, EMNRD](#)
To: [Hadlie Green](#)
Cc: [Bratcher, Michael, EMNRD](#); [Hamlet, Robert, EMNRD](#); [Velez, Nelson, EMNRD](#)
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 07/24/2023
Date: Wednesday, July 19, 2023 2:52:23 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

[**EXTERNAL EMAIL**]

Good afternoon Hadlie,

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,

Shelly

[Shelly Wells](#) * Environmental Specialist-Advanced
Administrative Permitting Program
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive | Santa Fe, NM 87505
(505)469-7520 | Shelly.Wells@emnrd.nm.gov
<http://www.emnrd.state.nm.us/OCD/>

From: Hadlie Green <hgreen@ensolum.com>
Sent: Wednesday, July 19, 2023 1:36 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; Kelton Beaird <KBeaird@btaoil.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 07/24/2023

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 July 24, 2023.

- Chiso 14 State Jet Pump and Excavation / nAPP2205837214
 - Sampling Date: 7/25-26/2023 @ 9:00 AM MST

Mesa #2H Tank Battery / NRM2026945362

- Sampling Date: 7/27/2023 @ 9:00 AM MST
- Mesa B #2 Tank Battery / nAPP2113973789
 - Sampling Date: 7/28/2023 @ 9:00 AM MST

Thank you,



Hadlie Green

Project Geologist

432-557-8895

hgreen@ensolum.com

Ensolum, LLC



From: [Buchanan, Michael, EMNRD](#)
To: [Hadlie Green: Enviro, OCD, EMNRD](#)
Cc: [Kelton Beaird](#); [Bratcher, Michael, EMNRD](#); [Hamlet, Robert, EMNRD](#); [Velez, Nelson, EMNRD](#)
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 09/11/2023
Date: Wednesday, September 6, 2023 2:31:06 PM
Attachments: [image005.jpg](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

[**EXTERNAL EMAIL**]

Good afternoon, Hadlie

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,

Mike Buchanan • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE, Suite 260 | Albuquerque, NM 87113
505.490.0798 | michael.buchanan@emnrd.nm.gov
<http://www.emnrd.nm.gov/oed>



From: Hadlie Green <hgreen@ensolum.com>
Sent: Wednesday, September 6, 2023 9:52 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Kelton Beaird <KBeaird@btaoil.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 09/11/2023

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 September 11, 2023.

- Mesa 8105 JV-P 013H / NCH1835547953, NAB1906552791, NAB1906551740
 - Sampling Date: 9/11/2023 @ 9:00 AM MST
- Mesa 8105-JV-P 004H / nOY1831160155
 - Sampling Date: 9/12-13/2023 @ 9:00 AM MST
- Rojo 18/19 & 38/39 Tank Battery / nAPP2103447746
 - Sampling Date: 9/12-13/2023 @ 9:00 AM MST
- Mesa 8105 JV-P #4H / nRM2004549559
 - Sampling Date: 9/14/2023 @ 9:00 AM MST
- Chiso 14 State Jet Pump Excavation / nAPP2205837214
 - Sampling Date: 9/14-15/2023 @ 9:00 AM MST
- Mesa B #2 Tank Battery / nAPP2113973789
 - Sampling Date: 9/15/2023 @ 9:00 AM MST

Thank you,



Hadlie Green

Project Geologist

432-557-8895

hgreen@ensolum.com

Ensolum, LLC





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	nAPP2113973789
District RP	
Facility ID	
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) nAPP2113973789
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

Location of Release Source

Latitude: 32.05100 Longitude: -103.60600
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Mesa B #2 Tank Battery	Site Type: Tank Battery
Date Release Discovered: 5/19/2021	API# (if applicable) Nearest well: Mesa B 8115 JVP Com #002H API #30-025-42125

Unit Letter	Section	Township	Range	County
P	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) 45 BBL	Volume Recovered (bbls) 33 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
Pump Failure.
A stud sheared on the top cap of a pressure pump allowing water to spray from under the loosened cap. Water was released across a portion of the caliche pad and in an off-pad area.

Form C-141

State of New Mexico

Page 2

Oil Conservation Division

Incident ID	nAPP2113973789
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?

☒ Yes ☐ No

If YES, for what reason(s) does the responsible party consider this a major release?

The spill volume was greater than 25 BBL, which the NMOCD Rules define as a major release.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Email notification sent by Bob Hall to ocd.enviro@state.nm.us, Mike Bratcher, and Jim Amos (BLM) on 5/19/2021.

Initial Response

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

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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

Printed Name: Bob Hall Title: Environmental Manager

Signature: _____



Date: 5/28/2021

email: bhall@btaoil.com

Telephone: 432-682-3753

OCD Only

Received by: Ramona Marcus

Date: 5/28/2021

NAPP2113973789

Location Mesa B #2H
API # 30-025-42125
Spill Date 5/19/2021

Spill Dimensions

ENTER - Length of Spill feet
ENTER - Width of Spill feet
ENTER - Saturation Depth of Spill inches
ENTER - Porosity Factor decimal

Oil Cut - Well Test / Vessel Throughput or Contents

Oil
 Water
 Calculated Oil Cut

Volume Recovered in Truck / Containment

ENTER - Recovered Oil BBL
ENTER - Recovered Water BBL

Calculated Values

Release of Oil in Soil - Unrecovered BBL
 Release of Water in Soil - Unrecovered BBL
 Unrecovered Total Release BBL

Calculated Values

Total Release of Oil BBL
 Total Release of Water BBL
 Total Release BBL

Types of Soil	Porosity Factor
Gravel	0.25
Sand	0.20
Clay/silt/sand Mix	0.15
Clay	0.05
Caliche	0.03
Unknown	0.25

(Length X Width X Depth X 1 ft/12 in) X Porosity
 5.615 ft³ / BBL

X

Oil Cut
 (or Water Cut)

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 29922

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 29922
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
marcus	None	5/28/2021

Incident ID	nAPP2113973789
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<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 type="checkbox"/> Yes <input checked="" 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 ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

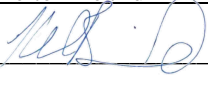
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	nAPP2113973789
District RP	
Facility ID	
Application ID	

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

Printed Name: Kelton Beaird Title: Environmental Manager
Signature:  Date: 10/16/2023
email: KBeaird@btaoil Telephone: 432-312-2203

OCD Only

Received by: _____ Date: _____

Incident ID	nAPP2113973789
District RP	
Facility ID	
Application ID	


Closure

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

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

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

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

Printed Name: Kelton Beaird Title: Environmental Manager
Signature:  Date: 10/16/2023
email: KBeaird@btaoil Telephone: 432-312-2203

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: Scott Rodgers Date: 01/02/2024
Printed Name: Scott Rodgers 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 277237

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 277237
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	None	1/2/2024