



September 5, 2024

New Mexico Oil Conservation Division

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

**Re: Reclamation Report
Mesa 8105 JVP #3H Produced Water Line
Incident Number NRM2016045357
Lea County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of BTA Oil Producers, LLC (BTA), has prepared the following *Reclamation Report* for the Mesa 8105 JVP #3H Produced Water Line (Site). This *Reclamation Report* documents the Site history, reclamation activities completed to date and proposes a vegetation monitoring plan.

BACKGROUND

The Site is located in Unit M, Section 1, Township 26 South, Range 32 East, in Lea County, New Mexico (32.06583°, -103.63671°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On May 21, 2020, a check valve on a water flow line located outside of containment failed. Approximately 16 barrels (bbls) of produced water were released into the pasture area west of the containment. No fluids were recovered; however, the saturated surface soil was excavated 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 June 5, 2020. The release was assigned Incident Number NRM2016045357.

Delineation and excavation of impacted soil was completed at the Site between May 2023 and June 2023. Based on the delineation and excavation soil sample analytical results, a *Closure Request* was submitted to the NMOCD on October 30, 2023. The NMOCD approved the *Closure Request* on February 15, 2024. Additional details regarding the release, Site Characterization, delineation and excavation activities, and soil sample analytical results can be referenced in the approved *Closure Request* included in Appendix A. Remediation of the release was completed in accordance with Title 19, Chapter 15, Part 29, (19.15.29) of the New Mexico Administrative Code (NMAC).

RECLAMATION ACTIVITIES

Upon completion of excavation activities and receipt of final laboratory analytical results, the excavation was backfilled, and the disturbed area was restored to its original condition. The excavation was backfilled with locally procured topsoil, consistent with the surrounding native soil type. Following backfill

BTA Oil Producers, LLC
 Reclamation Report
 Mesa 8105 JVP #3H Produced Water Line

activities, the disturbed area was graded and contoured to match the surrounding topography. The excavation extent and reclamation area are shown on the attached Figure 1.

One representative 5-point composite sample (BF01) was collected from the topsoil backfill material. The backfill soil sample was transported under strict chain-of-custody procedures to Cardinal Laboratories in Carlsbad, New Mexico, for analysis of the following constituents of concern (COC): benzene, toluene, ethylbenzene, and total xylenes (BTEX) following United States Environmental Protection Agency (EPA) Method 8021B; total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 4500.

Laboratory analytical results for the backfill soil sample confirmed compliance with NMOCD requirements for the reclaimed area to contain non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 milligrams per kilogram (mg/kg) and TPH concentrations less than 100 mg/kg. The laboratory analytical results are summarized in the attached Table 1 and the complete laboratory analytical report is included as Appendix B.

The disturbed pasture area was seeded with the BLM seed mix #1 for loamy sites at the rate specified in pounds of pure live seed (PLS) per acre.

Species/Cultivar	PLS/Acre
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sands dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

The seed mix was doubled and distributed with a broadcast seed spreader and harrowed in. Photographs of the backfilled excavation and

seeding of the reclaimed area are provided in Appendix C.

VEGETATION MONITORING

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

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

A *Revegetation Report* will be submitted to the NMOCD once vegetation growth in the reclaimed pasture area has uniform vegetative cover that reflects a life-form ratio of plus or minus 50 percent (%) of pre-disturbance levels and a total percent plant cover of at least 70% of pre-disturbance levels, excluding noxious weeds, per NMAC 19.15.29.13 D.(3).

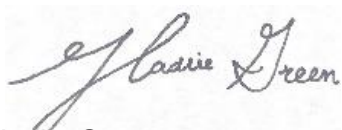
BTA Oil Producers, LLC
Reclamation Report
Mesa 8105 JVP #3H Produced Water Line

RECLAMATION APPROVAL REQUEST

Based on the reclamation activities completed to date and proposed vegetation monitoring plan described above, BTA respectfully requests approval of this *Reclamation Report* and a status update to *Reclamation Report Approved, Pending submission of Re-Vegetation Report* for Incident NRM2016045357.

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



Daniel R. Moir, PG (Licensed in WY & TX)
Senior Managing Geologist

cc: Ray Ramos, BTA
Bureau of Land Management



Appendices:

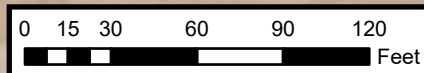
Figure 1	Excavation Extent / Reclamation Area
Table 1	Backfill Soil Sample Analytical Results
Appendix A	October 30, 2023 Closure Request
Appendix B	Laboratory Analytical Report & Chain of Custody Documentation
Appendix C	Photographic Log



FIGURES

Legend

-  Reclamation Area
-  Excavation Extent



Sources: Environmental Systems Research Institute (ESRI)



Excavation Extent / Reclamation Area

BTA Oil Producers, LLC
Mesa 8105 JVP #3H Produced Water Line
Incident Number: NRM2016045357
Unit M, Section 1, T26S, R32E
Lea County, New Mexico

FIGURE

1



TABLES



TABLE 1
BACKFILL SOIL SAMPLE ANALYTICAL RESULTS
Mesa 8105 JVP #3H Produced Water Line
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	NE	100	600
Backfill Soil Sample										
BF01	06/10/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144

Notes:
bgs: below ground surface
mg/kg: milligrams per kilogram
NE: Not Established
NMOCD: New Mexico Oil Conservation Division
NMAC: New Mexico Administrative Code
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbon



APPENDIX A

October 30, 2023 Closure Request



October 23, 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 8105 JVP #3H Produced Water Line
Incident Number NRM2016045357
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, excavation, and soil sampling activities performed at the Mesa 8105 JVP #3H Produced Water Line (Site). The purpose of the Site assessment, excavation, and soil sampling activities was to address impacts to soil resulting from a historical produced water release at the Site. Based on field observations, excavation activities, and soil sample laboratory analytical results, BTA is submitting this *Closure Request*, requesting no further action for Incident Number NRM2016045357.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit M, Section 1, Township 26 South, Range 32 East, in Lea County, New Mexico (32.06583°, -103.63670°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On May 21, 2020, a check valve on a water flow line located outside of containment failed. Approximately 16 barrels (bbls) of produced water were released into the pasture area west of the containment. No fluids were recovered; however, the saturated surface soil was excavated during initial spill response activities. BTA reported the release to the New Mexico Oil Conservation Division (NMOCD) and submitted a Release Notification Form C-141 (Form C-141) on June 5, 2020. The release was assigned Incident Number NRM2016045357.

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 greater than 55 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-04485-POD1, located approximately 0.3 miles southeast of the Site. The well was drilled during October 2020 to a total depth of 55 feet bgs, and no groundwater was encountered. The borehole was properly abandoned using hydrated bentonite chips.

BTA Oil Producers, LLC
Closure Request
Mesa 8105 JVP #3H Produced Water Line

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

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

SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On May 10, 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. No visible indications of the historical release were observed. Nine assessment soil samples (SS01 through SS09) were collected within and around the documented release extent at a depth of approximately 0.5 feet bgs, to assess for the presence or absence of impacted soil. 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 Standard Method SM4500.

Laboratory analytical results for assessment soil samples SS01, SS04, and SS05, collected within the release extent, and SS06 through SS09, collected around the release extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria. Laboratory analytical results for assessment soil samples SS02 and SS03, collected within the release extent, indicated chloride concentrations exceeded the reclamation requirement. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D. Based on laboratory analytical results, vertical delineation activities and excavation of impacted soil were warranted.

BTA Oil Producers, LLC
Closure Request
Mesa 8105 JVP #3H Produced Water Line

DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On June 20, 2023, Ensolum personnel returned to the Site to complete vertical delineation activities to further assess for impacted soil within the historical release area. Boreholes were advanced via hydrovac at the location of assessment samples SS01, SS04, and SS05. The boreholes were advanced to a depth of 3 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. Based on the absence of elevated field screening results, discrete delineation soil samples (SS01A, SS04A, and SS05A) were collected from the boreholes at a depth of 3 feet bgs for laboratory analysis. 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 delineation soil samples SS01A, SS04A, and SS05A indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and further confirmed the absence of impacted soil in the areas around boreholes SS01, SS04, and SS05. Based on laboratory analytical results, excavation activities were warranted in the areas around assessment soil samples SS02 and SS03. Laboratory analytical results are summarized in Table 1 and the complete analytical reports are included as Appendix D.

EXCAVATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On June 20, 2023 and June 21, 2023, Ensolum personnel oversaw excavation of impacted soil from the release area as indicated by laboratory analytical results for assessment samples SS02 and SS03. Excavation activities were performed via hand shoveling, backhoe, and skidsteer to depths ranging from 1-foot to 1.5 feet bgs. To direct excavation activities, soil was field screened for VOCs and chloride as previously described. Photographic documentation is included in Appendix B.

Following removal of impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor and sidewalls of the excavation. The 5-point composite soil samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS03 were collected from the floor of the excavation at depths ranging from 1-foot to 1.5 feet bgs. Due to the shallow depth of the excavation, soil from the excavation sidewalls was included in the floor samples. The soil samples were handled and analyzed as previously described. The excavation extent and excavation soil sample locations were mapped utilizing a handheld GPS unit and are depicted on Figure 3.

Laboratory analytical results for excavation floor samples FS01 through FS03 indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirement. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

The aerial footprint of the excavation measured approximately 526 square feet. A total of approximately 30 cubic yards of soil were removed during excavation activities. The impacted soil was transported and properly disposed of at the R360 Disposal Facility in Hobbs, New Mexico.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the impacted soil resulting from the May 21, 2020, release of produced water. Laboratory analytical results for the excavation soil samples indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirements. Additionally, laboratory analytical results for the assessment soil samples

BTA Oil Producers, LLC
Closure Request
Mesa 8105 JVP #3H Produced Water Line

provided lateral and vertical delineation to the most stringent Table I Closure Criteria. Based on the laboratory analytical results, impacted soil was excavated and no further remediation is required.

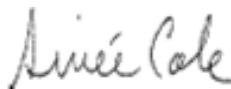
Initial response efforts, excavation of impacted soil, and natural attenuation have mitigated impacts at this Site. Depth to groundwater was determined to be greater than 55 feet bgs within 0.5 miles of the Site and no other sensitive receptors were identified near the release extent. BTA believes the remedial actions completed are protective of human health, the environment, and groundwater. As such, BTA respectfully requests closure for Incident Number NRM2016045357. 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



Ronni Hayes
Assistant Geologist



Aimee Cole
Senior Managing Scientist

cc: Kelton Beaird, BTA
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Lithologic/Soil Sampling Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Notifications
Appendix F	Final C-141



FIGURES

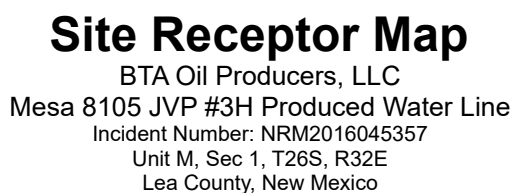


FIGURE
1

Legend

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

**Notes:**

Sample ID @ Depth Below Ground Surface.
 Samples in bold indicate sample exceeded applicable closure criteria.
 Grey text indicate soil sample was removed during excavation activities.

0 5 10 20 30 40
 Feet

Sources: Environmental Systems Research Institute (ESRI)

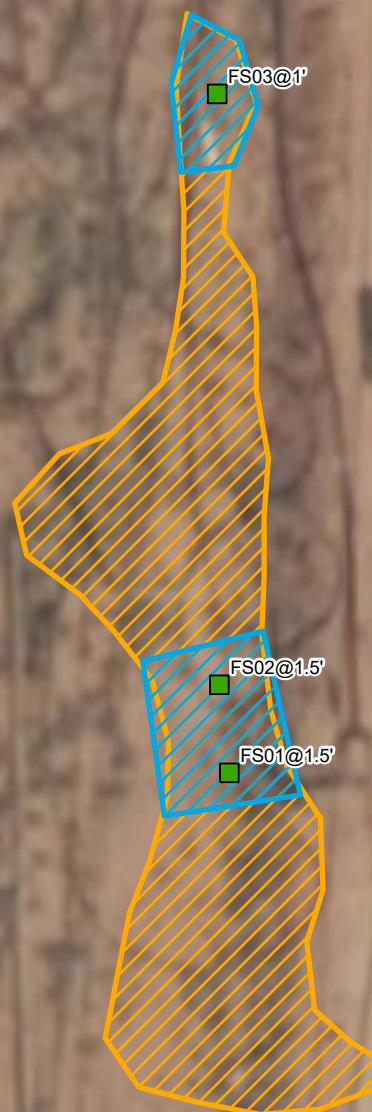
**Delineation Soil Sample Locations**

BTA Oil Producers, LLC
 Mesa 8105 JVP #3H Produced Water Line
 Incident Number: NRM2016045357
 Unit M, Sec 1, T26S, R32E
 Lea County, New Mexico

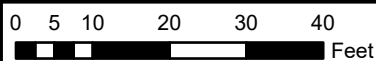
FIGURE**2**

Legend

- Excavation Soil Sample
in Compliance with
Closure Criteria
- ▨ Excavation Extent
- ▨ Release Extent



Notes:
Sample ID @ Depth Below Ground/Surface.



Sources: Environmental Systems Research Institute (ESRI)



Excavation Soil Sample Locations

BTA Oil Producers, LLC
Mesa 8105 JVP #3H Produced Water Line
Incident Number: NRM2016045357
Unit M, Sec 1, T26S, R32E
Lea County, New Mexico

FIGURE

3



TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Mesa 8105 JVP #3H Produced Water Line
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 Soil Samples										
SS01*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
SS01A*	06/20/2023	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS02*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	736
SS03*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,200
SS04*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	544
SS04A*	06/20/2023	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS05*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS05A*	06/20/2023	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS06*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS07*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS08*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SS09*	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
Confirmation Soil Samples										
FS01*	06/21/2023	1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	304
FS02*	06/21/2023	1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
FS03*	06/21/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

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

Gray text indicates sample area excavated

* 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

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.) C-04485		OWL 362	WELL TAG ID NO. NA		OSE FILE NO(S). C-04485	
WELL OWNER NAME(S) KJ ENVIRONMENTAL				PHONE (OPTIONAL) 214-287-5875		
WELL OWNER MAILING ADDRESS 500 MOSSELEY ROAD				CITY CROSS ROADS		
				STATE TX		ZIP 76227
WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84		
	LATITUDE 3548560		N			
	LONGITUDE 629271		W			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE						

2. DRILLING & CASING INFORMATION

LICENSE NO. WD 1186		NAME OF LICENSED DRILLER RODNEY HAMMER			NAME OF WELL DRILLING COMPANY ENVIRO-DRILL, INC.		
DRILLING STARTED 10/05/2020	DRILLING ENDED 10/06/2020	DEPTH OF COMPLETED WELL (FT) 55'	BORE HOLE DEPTH (FT) 55'	DEPTH WATER FIRST ENCOUNTERED (FT) None (Dry)			
COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT)		
DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: HSA							
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						
55	45	8"	Screen	FJT	2"	2"	.010
45	0	8"	Blank	11	11	11	

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				
55	43	8"	Sand 10/20	10	tremie
43	41	8"	Hole Plug	1	
41	0	8"	Grout	100 gal.	↓

FOR OSE INTERNAL USE

FILE NO. C-0-2599	WR-20 WELL RECORD & LOG (Version 06/30/17)
LOCATION 2-2-4	POD NO. 2N-33E-10
WELL TAG ID NO. 693367	PAGE 1 OF 2

0.00

Released to Imaging: 9/27/2024 11:31:03 AM



USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:
United States

GO

Click to hideNews Bulletins

- Explore the NEW [USGS National Water Dashboard](#) interactive map to access real-time water data from over 13,500 stations nationwide.
- [Full News](#)

Groundwater levels for the Nation

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

Search Results -- 1 sites found

Agency code = usgs
site_no list =

- 320449103360101

Minimum number of levels = 1
[Save file of selected sites](#) to local disk for future upload

USGS 320449103360101 25S.33E.31.44424

Lea County, New Mexico
Latitude 32°04'49", Longitude 103°36'01" NAD27
Land-surface elevation 3,383 feet above NAVD88
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1981-03-25			D	62610	3189.23	NGVD29	P		Z	
1981-03-25			D	62611	3190.85	NAVD88	P		Z	
1981-03-25			D	72019	192.15		P		Z	
1986-03-18			D	62610	3191.59	NGVD29	1		Z	
1986-03-18			D	62611	3193.21	NAVD88	1		Z	
1986-03-18			D	72019	189.79		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
Status	1	Static

Section	Code	Description
Status	P	Pumping
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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Title: Groundwater for USA: Water Levels
URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)
Page Last Modified: 2023-05-19 14:18:07 EDT
0.28 0.24 nadww02



APPENDIX B

Photographic Log

**Photographic Log**

Client Name: BTA Oil Producers, LLC

Site Name: Mesa 8105 JVP #3H Produced Water Line

Incident#: NRM2016045357



Photograph: 1 Date: 5/10/2023
Description: Historical release area
View: Northeast



Photograph: 2 Date: 6/21/2023
Description: Completed excavation
View: Northwest



Photograph: 3 Date: 6/21/2023
Description: Completed excavation
View: West





Photograph: 4 Date: 6/21/2023
Description: Completed excavation
View: West




APPENDIX C

Lithologic/Soil Sampling Logs

 ENSOLUM								Sample Name: SS01		Date: 06/20/2023	
								Site Name: Mesa 8105 JVP #3H Produced Water Line			
								Incident Number: NRM2016045357			
								Job Number: 03C201253			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: M. Roberts		Method: HVAC	
Coordinates: (32.066017, -103.636905)								Hole Diameter: 6"		Total Depth: 3'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	168	0.0	N	SS01	1	1	SM-GM	(1') SAND: fine to medium grained, trace amounts of gravel, poorly graded, medium brown.			
Dry	<168	0.0	N	-	-	2	SM-GM	(2') SAND: SAA			
Dry	<168	0.0	N	SS01A	3	3	SM-GM	(3') SAND: SAA			
TD @ 3' bgs											

								Sample Name: SS04		Date: 06/20/2023			
								Site Name: Mesa 8105 JVP #3H Produced Water Line					
								Incident Number: NRM2016045357					
								Job Number: 03C201253					
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: M. Roberts		Method: HVAC			
Coordinates: (32.06588, -103.636890)								Hole Diameter: 6"		Total Depth: 3'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.													
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions					
Dry	168	0.0	N	SS01	1	1	SM-GM	(1') SAND: fine to medium grained, trace amounts of gravel, poorly graded, medium brown, no odor.					
Dry	<168	0.0	N	-	-	2	SM-GM	(2') SAND: SAA					
Dry	<168	0.0	N	SS01A	3	3	SM-GM	(3') SAND: fine to medium grained, trace amounts of gravel, poorly graded, dark brown, no odor.					
TD @ 3' bgs													

								Sample Name: SS05		Date: 06/20/2023	
								Site Name: Mesa 8105 JVP #3H Produced Water Line			
								Incident Number: NRM2016045357			
								Job Number: 03C201253			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: M. Roberts		Method: HVAC	
Coordinates: (32.065823, -103.636888)								Hole Diameter: 6"		Total Depth: 3'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	168	0.0	N	SS01	1	1	SM-GM	(1') SAND: fine to medium grained, trace amounts of gravel, poorly graded, medium brown, no odor.			
Dry	<168	0.0	N	-	-	2	SM-GM	(2') SAND: SAA			
Dry	<168	0.0	N	SS01A	3	3	SM-GM	(3') SAND: fine to medium grained, trace amounts of gravel, poorly graded, dark brown, no odor.			
TD @ 3' bgs											



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



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

May 17, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA 8105 JVP #3H

Enclosed are the results of analyses for samples received by the laboratory on 05/12/23 14:35.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 01 0.5' (H232400-01)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/15/2023	ND	2.32	116	2.00	6.49	
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99	
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05	
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96	
Total BTEX	<0.300	0.300	05/15/2023	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	192	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 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: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 02 0.5' (H232400-02)

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	05/15/2023	ND	2.32	116	2.00	6.49		
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96		
Total BTEx	<0.300	0.300	05/15/2023	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	736	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 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: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 03 0.5' (H232400-03)

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	05/15/2023	ND	2.32	116	2.00	6.49	
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99	
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05	
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96	
Total BTEX	<0.300	0.300	05/15/2023	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	1200	16.0	05/15/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 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: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 04 0.5' (H232400-04)

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	05/15/2023	ND	2.32	116	2.00	6.49		
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96		
Total BTEx	<0.300	0.300	05/15/2023	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	544	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 97.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 05 0.5' (H232400-05)

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	05/15/2023	ND	2.32	116	2.00	6.49	
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99	
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05	
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96	
Total BTEX	<0.300	0.300	05/15/2023	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	80.0	16.0	05/15/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 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: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 06 0.5' (H232400-06)

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	05/16/2023	ND	2.23	112	2.00	4.60	
Toluene*	<0.050	0.050	05/16/2023	ND	2.22	111	2.00	4.51	
Ethylbenzene*	<0.050	0.050	05/16/2023	ND	2.20	110	2.00	5.22	
Total Xylenes*	<0.150	0.150	05/16/2023	ND	6.69	112	6.00	5.03	
Total BTX	<0.300	0.300	05/16/2023	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	32.0	16.0	05/15/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 07 0.5' (H232400-07)

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/16/2023	ND	2.23	112	2.00	4.60	
Toluene*	<0.050	0.050	05/16/2023	ND	2.22	111	2.00	4.51	
Ethylbenzene*	<0.050	0.050	05/16/2023	ND	2.20	110	2.00	5.22	
Total Xylenes*	<0.150	0.150	05/16/2023	ND	6.69	112	6.00	5.03	
Total BTX	<0.300	0.300	05/16/2023	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	48.0	16.0	05/15/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 97.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 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: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 08 0.5' (H232400-08)

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	05/16/2023	ND	2.23	112	2.00	4.60	
Toluene*	<0.050	0.050	05/16/2023	ND	2.22	111	2.00	4.51	
Ethylbenzene*	<0.050	0.050	05/16/2023	ND	2.20	110	2.00	5.22	
Total Xylenes*	<0.150	0.150	05/16/2023	ND	6.69	112	6.00	5.03	
Total BTX	<0.300	0.300	05/16/2023	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	64.0	16.0	05/15/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 92.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 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: 05/12/2023
Reported: 05/17/2023
Project Name: MESA 8105 JVP #3H
Project Number: 03C2012053
Project Location: BTA 32.06583,-103.63670

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 09 0.5' (H232400-09)

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	05/16/2023	ND	2.23	112	2.00	4.60	
Toluene*	<0.050	0.050	05/16/2023	ND	2.22	111	2.00	4.51	
Ethylbenzene*	<0.050	0.050	05/16/2023	ND	2.20	110	2.00	5.22	
Total Xylenes*	<0.150	0.150	05/16/2023	ND	6.69	112	6.00	5.03	
Total BTX	<0.300	0.300	05/16/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	05/15/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 92.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 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 Project Manager: Hadlie Green Address: 3122 National Parks Hwy City: Carlsbad State: NM Zip: 88220 Phone #: 432-557-8895 Fax #:				P.O. #: Company: BTA Oil Attn: Kevin Jones Address: 104 S Pecos St City: Midland State: TX Zip: 79701 Phone #: 432-312-2203 Fax #:				BILL TO				ANALYSIS REQUEST							
Project #: 03C2012053 Project Owner: BTA Oil Producers Project Name: Mesa 8105 JVP #3H Project Location: 32.06583, -103.63670 Sampler Name: Ronni Hayes																			
FOR LAB USE ONLY																			
Lab I.D.		Sample I.D.		Depth (feet)		D.S.		G (G)RAB OR (C)OMP.		# CONTAINERS		MATRIX				PRESERV		SAMPLING	
												GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :							
H2334400		5501		1		G		1											
2		5502		2		G		1											
3		5503		3		G		1											
4		5504		4		G		1											
5		5505		5		G		1											
6		5506		6		G		1											
7		5507		7		G		1											
8		5508		8		G		1											
9		5509		9		G		1											
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Relinquished By: <i>Ami Hays</i> Date: <i>3-12-23</i> Time: <i>1435</i>				Received By: <i>Matthew Delgado</i> Date: _____ Time: _____				Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: _____ All Results are emailed. Please provide Email address: _____				REMARKS: _____							
Relinquished By: _____ Date: _____ Time: _____				Received By: _____ Date: _____ Time: _____				Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: _____ All Results are emailed. Please provide Email address: _____				REMARKS: _____							
Delivered By: (Circle One) Sampler - UPS - Bus - Other: _____				Observed Temp. °C: <i>44</i> Corrected Temp. °C: <i>38</i>				Sample Condition Cool Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Other: <input type="checkbox"/> Yes <input type="checkbox"/> No				CHECKED BY: (Initials) <i>AD</i>							
Turnaround Time: _____ Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>				Thermometer ID #113 Correction Factor -0.5°C				Bacteria (only) Sample Condition Cool Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Observed Temp. °C: _____ Corrected Temp. °C: _____											



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

June 27, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA 8105 JVP #3H PRODUCTION WATER LINE

Enclosed are the results of analyses for samples received by the laboratory on 06/23/23 9:29.

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 "Mike Snyder". The signature is fluid and cursive, with the first name "Mike" and last name "Snyder" clearly distinguishable.

Mike Snyder For 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:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/27/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #3H PRODUCTION WAT	Sampling Condition:	Cool & Intact
Project Number:	03C2012	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06583,-103.63670		

Sample ID: FS 01 1.5' (H233253-01)

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	06/24/2023	ND	2.32	116	2.00	9.06	
Toluene*	<0.050	0.050	06/24/2023	ND	2.25	113	2.00	8.28	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.19	109	2.00	7.07	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.59	110	6.00	6.62	
Total BTX	<0.300	0.300	06/24/2023	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	304	16.0	06/23/2023	ND	400	100	400	7.69	

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	06/23/2023	ND	173	86.4	200	0.328	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	163	81.6	200	0.0809	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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Mike Snyder For 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:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/27/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #3H PRODUCTION WAT	Sampling Condition:	Cool & Intact
Project Number:	03C2012	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06583,-103.63670		

Sample ID: FS 02 1.5' (H233253-02)

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	06/24/2023	ND	2.32	116	2.00	9.06	
Toluene*	<0.050	0.050	06/24/2023	ND	2.25	113	2.00	8.28	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.19	109	2.00	7.07	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.59	110	6.00	6.62	
Total BTX	<0.300	0.300	06/24/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/23/2023	ND	400	100	400	7.69	

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	06/23/2023	ND	173	86.4	200	0.328	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	163	81.6	200	0.0809	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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Mike Snyder For 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:	06/23/2023	Sampling Date:	06/21/2023
Reported:	06/27/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #3H PRODUCTION WAT	Sampling Condition:	Cool & Intact
Project Number:	03C2012	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06583,-103.63670		

Sample ID: FS 03 1' (H233253-03)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2023	ND	2.32	116	2.00	9.06	
Toluene*	<0.050	0.050	06/24/2023	ND	2.25	113	2.00	8.28	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.19	109	2.00	7.07	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.59	110	6.00	6.62	
Total BTEX	<0.300	0.300	06/24/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/23/2023	ND	400	100	400	7.69	

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	06/23/2023	ND	173	86.4	200	0.328	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	163	81.6	200	0.0809	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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



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Notes and Definitions

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

Cardinal Laboratories

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

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC

BILL TO

ANALYSIS REQUEST

Project Manager: Hadie Green

P.O. #:

Address: 3122 Nat'l Parks Hwy

Company: BTA Oil

City: Carlsbad

State: NM Zip: 88220

Attn: Keaton Beard

Phone #: 432-557-8895

Fax #:

Address: 104 S. Pecos St

Project #: 03C2012

Project Owner:

BIGS JVP #34

City: Midland

Project Name: Mesa High Flow MESA Production Water Line

State: TX Zip: 79701

Project Location: 32.06583 - 103.63610

Phone #:

Sampler Name: Meredith Roberts

Fax #:

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

Depth (feet)

(G)RAB OR (C)OMP

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

BTEX

Chlorides

TPH

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PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of time, 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:

Received By:

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

Relinquished By: [Signature]

Date: 09/09/23
Time: 0929

Received By: [Signature]

All Results are emailed. Please provide Email address: tmom35@ensolum.com
meredith@ensolum.com
REMARKS: Incident #: nm2016045357

Delivered By: (Circle One)

Observed Temp. °C

Sample Condition

CHECKED BY: (Initials)

Turnaround Time:

Standard

☒

Bacteria (only)

Sample Condition

Observed Temp. °C

Corrected Temp. °C

Sampler - UPS - Bus - Other:

Observed Temp. °C

Sample Condition

CHECKED BY: (Initials)

Turnaround Time:

Standard

☐

Bacteria (only)

Sample Condition

Observed Temp. °C

Corrected Temp. °C

FORM 400 (R-3-2-10/07/13)

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



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

June 27, 2023

HADLIE GREEN

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: MESA 8105 JVP #3H PRODUCED WATERLINE

Enclosed are the results of analyses for samples received by the laboratory on 06/23/23 9:29.

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 "Mike Snyder". The signature is fluid and cursive, with the first name "Mike" and last name "Snyder" clearly distinguishable.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	06/23/2023	Sampling Date:	06/20/2023
Reported:	06/27/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #3H PRODUCED WATER	Sampling Condition:	Cool & Intact
Project Number:	03C201203	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06583,-103.63670		

Sample ID: SS 01 A 3 FT (H233254-01)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/24/2023	ND	2.32	116	2.00	9.06	
Toluene*	<0.050	0.050	06/24/2023	ND	2.25	113	2.00	8.28	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.19	109	2.00	7.07	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.59	110	6.00	6.62	
Total BTEX	<0.300	0.300	06/24/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	06/23/2023	ND	400	100	400	7.69		

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	06/23/2023	ND	173	86.4	200	0.328	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	163	81.6	200	0.0809	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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



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

Analytical Results For:

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

Received:	06/23/2023	Sampling Date:	06/20/2023
Reported:	06/27/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #3H PRODUCED WATER	Sampling Condition:	Cool & Intact
Project Number:	03C201203	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06583,-103.63670		

Sample ID: SS 04 A 3 FT (H233254-02)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/24/2023	ND	2.32	116	2.00	9.06		
Toluene*	<0.050	0.050	06/24/2023	ND	2.25	113	2.00	8.28		
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.19	109	2.00	7.07		
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.59	110	6.00	6.62		
Total BTEx	<0.300	0.300	06/24/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	06/23/2023	ND	400	100	400	7.69		

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	06/23/2023	ND	173	86.4	200	0.328	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	163	81.6	200	0.0809	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane 132 % 48.2-134

Surrogate: 1-Chlorooctadecane 132 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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



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

Analytical Results For:

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

Received:	06/23/2023	Sampling Date:	06/20/2023
Reported:	06/27/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #3H PRODUCED WATER	Sampling Condition:	Cool & Intact
Project Number:	03C201203	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06583,-103.63670		

Sample ID: SS 05 A 3 FT (H233254-03)

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	06/24/2023	ND	2.32	116	2.00	9.06	
Toluene*	<0.050	0.050	06/24/2023	ND	2.25	113	2.00	8.28	
Ethylbenzene*	<0.050	0.050	06/24/2023	ND	2.19	109	2.00	7.07	
Total Xylenes*	<0.150	0.150	06/24/2023	ND	6.59	110	6.00	6.62	
Total BTX	<0.300	0.300	06/24/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/23/2023	ND	400	100	400	7.69	

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	06/23/2023	ND	173	86.4	200	0.328	
DRO >C10-C28*	<10.0	10.0	06/23/2023	ND	163	81.6	200	0.0809	
EXT DRO >C28-C36	<10.0	10.0	06/23/2023	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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



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

Notes and Definitions

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

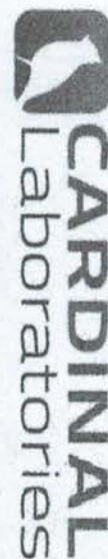
Cardinal Laboratories

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

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Project Manager: Haydlee Green Address: 601 North Mariendfield City: Midland State: TX Zip: 79701 Phone #: 432-557-8895 Fax #: Project #: 036201203 Project Owner: BTA Project Name: Mesa 8105 JUP #3H Produced water line Project Location: 32.06583, -103.63670 Sampler Name: LD										P.O. #: Company: BTA o.i Attn: Kelton Beard Address: 1095 pecos st. City: Midland State: TX Zip: 79701 Phone #: Fax #:			
FOR LAB USE ONLY													
Lab I.D. H233384		Sample I.D. 1 SS01A 2 SS04A 3 SS05A		Depth (feet) 3 ft 3 ft 3 ft		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		MATRIX PRESERV. SAMPLING		DATE TIME 6/20/23 0954 6/20/23 1030 6/20/23 1051		TPH 1005 8015 BTEX 8021 Chloride 300 4500	
PLEASE NOTE: Liability and Damages. Contractor's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Client within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits, incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.													
Relinquished By: Mon Dillon		Date: 6/20/23 Time: 1538		Received By: Muelly		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: All Results are emailed. Please provide Email address: ngreene@ensolum.com muelly@ensolum.com		REMARKS:					
Relinquished By: Muelly		Date: 6/23/23 Time: 0929		Received By: Muelly		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID #113 Standard <input checked="" type="checkbox"/> Bacteria (only) <input type="checkbox"/> Correction Factor -0.5°C Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Observed Temp. °C Corrected Temp. °C		REMARKS:					



APPENDIX E

NMOCD Notifications

From: [Enviro, OCD, EMNRD](#)
To: [Hadlie Green](#); [Bratcher, Michael, EMNRD](#)
Cc: [Bratcher, Michael, EMNRD](#); [Velez, Nelson, EMNRD](#)
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 06/19/2023
Date: Friday, June 16, 2023 2:39:46 PM
Attachments: [image005.jpg](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

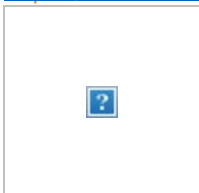
[**EXTERNAL EMAIL**]

Hadlie,

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

JH

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



From: Hadlie Green <hgreen@ensolum.com>
Sent: Friday, June 16, 2023 10:54 AM
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 06/19/2023

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 June 19, 2023.

- Mesa 30 31 Tank Battery / nAPP2106930621

- Sampling Date: 6/19/2023 @ 9:00 AM MST
- Mesa 8105 JVP #3 Produced Water Line / nRM2016045357
 - Sampling Date: 6/19-20/2023 @ 9:00 AM MST
- Mesa #16H Flowline / nAPP2123156473
 - Sampling Date: 6/21-22/2023 @ 9:00 AM MST
- Harroun Ranch #005 / nAPP2200455573
 - Sampling Date: 6/21/2023 @ 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	NRM2016045357
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)
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

Location of Release Source

Latitude: 32.06583° Longitude: -103.63670°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Mesa 8105 JVP #3H Produced Water Line	Site Type: Flowline
Date Release Discovered: 5/21/2020	API# (if applicable) Nearest well: Mesa #3H API #30-025-41290

Unit Letter	Section	Township	Range	County
M	1	26S	32E	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) 16 BBL	Volume Recovered (bbls) 0 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

The body of a check valve failed on the water flow line. This check valve was outside of secondary containment. As a result, 16 BBL of produced water was released from the raised location and down into a gully. Except in the area of the busted check valve, the produced water ran across the surface of the ground and soaked in. No water was recovered. Removal of the soil impacted by the produced water is nearly complete on the date of this filing. The produced water soaked into the soil about 6 inches deep.

The reported volume was determined by measuring the area of the "wetted" area from a drone picture. Then, using the field finding of an average 6 inches penetration, a calculated volume of the release was estimated to be 16 BBL of unrecovered produced water.

Form C-141

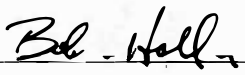
State of New Mexico
Oil Conservation Division

Page 2

Incident ID	NRM2016045357
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why: Remediation of the area by removal of the produced water impacted soil is nearly complete as of the date of this filing (6/5/2020).
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. Printed Name: Bob Hall Title: Environmental Manager Signature: <u></u> Date: 6/5/2020 email: bhall@btaoil.com Telephone: 432-682-3753
<u>OCD Only</u> Received by: <u>Ramona Marcus</u> Date: <u>6/8/2020</u>

Mesa #003H
May 21, 2020

NRM2016045357



Location Mesa B #003H
API # 30-025-41290
Spill Date 5/21/2020

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 Porosity5.615 ft³ / BBL

X

Oil Cut
(or Water Cut)

Incident ID	NRM20160445357
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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


<p>Characterization Report Checklist: <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.<input checked="" type="checkbox"/> Field data<input checked="" type="checkbox"/> Data table of soil contaminant concentration data<input checked="" type="checkbox"/> Depth to water determination<input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release<input checked="" type="checkbox"/> Boring or excavation logs<input checked="" type="checkbox"/> Photographs including date and GIS information<input checked="" type="checkbox"/> Topographic/Aerial maps<input checked="" type="checkbox"/> Laboratory data including chain of custody

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

State of New Mexico
Oil Conservation Division

Incident ID	NRM20160445357
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: 10/23/2023
email: KBeaird@btaoil Telephone: 432-312-2203

OCD Only

Received by: _____ Date: _____

Incident ID	NRM20160445357
District RP	
Facility ID	
Application ID	

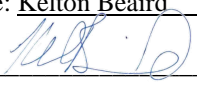
Closure

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: 10/23/2023
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: _____ Date: _____

Printed Name: _____ Title: _____



APPENDIX B

Laboratory Analytical Report & Chain of Custody Documentation



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

June 17, 2024

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA 8105 JVP #3H PRODUCTION WATER LINE

Enclosed are the results of analyses for samples received by the laboratory on 06/11/24 13:15.

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

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:	06/11/2024	Sampling Date:	06/10/2024
Reported:	06/17/2024	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #3H PRODUCTION WAT	Sampling Condition:	Cool & Intact
Project Number:	03C2012053	Sample Received By:	Alyssa Parras
Project Location:	32.06583,-103.63670		

Sample ID: BF 01 0.5 (H243380-01)

BTEx 8021B			mg/kg		Analyzed By: JH				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/14/2024	ND	2.11	105	2.00	1.59	
Toluene*	<0.050	0.050	06/14/2024	ND	2.26	113	2.00	1.56	
Ethylbenzene*	<0.050	0.050	06/14/2024	ND	2.27	113	2.00	1.55	
Total Xylenes*	<0.150	0.150	06/14/2024	ND	6.98	116	6.00	1.81	
Total BTEX	<0.300	0.300	06/14/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	144	16.0	06/14/2024	ND	416	104	400	3.77	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/13/2024	ND	175	87.6	200	3.93	
DRO >C10-C28*	<10.0	10.0	06/13/2024	ND	184	91.9	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	06/13/2024	ND					

Surrogate: 1-Chlorooctane 72.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 69.3 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

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

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

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



APPENDIX C

Photographic Log



Photographic Log

BTA Oil Producers, LLC

Mesa 8105 JVP #3H Produced Water Line

Incident Number NRM2016045357



Photograph: 1
Description: Reclaimed area
View: Southwest

Date: 6/10/2024



Photograph: 2
Description: Reclaimed area
View: Southwest

Date: 6/10/2024



Photograph: 3
Description: Reseeded area
View: South

Date: 7/24/2024



Photograph: 4
Description: Reseeded area
View: North

Date: 7/24/2024

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

QUESTIONS

Action 381234

QUESTIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:
	260297
	Action Number:
	381234
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

Prerequisites	
Incident ID (n#)	nRM2016045357
Incident Name	NRM2016045357 MESA 8105 JVP #3H PRODUCED WATER LINE @ 30-025-41290
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received
Incident Well	[30-025-41290] MESA 8105 JV P #003H

Location of Release Source	
Please answer all the questions in this group.	
Site Name	MESA 8105 JVP #3H PRODUCED WATER LINE
Date Release Discovered	05/21/2020
Surface Owner	Federal

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

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure Valve Produced Water Released: 16 BBL Recovered: 0 BBL Lost: 16 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 381234

QUESTIONS (continued)

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:
	260297
	Action Number:
	381234
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response

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

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

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

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

I hereby agree and sign off to the above statement	Name: BTA ENSOLUM Title: Environmental Manager Email: rramos@btaoil.com Date: 09/06/2024
--	---

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QUESTIONS, Page 3

Action 381234

QUESTIONS (continued)

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:
	260297
	Action Number:
	381234
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS**Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 300 and 500 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan

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

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

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

Chloride	(EPA 300.0 or SM4500 Cl B)	1200
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	0
GRO+DRO	(EPA SW-846 Method 8015M)	0
BTEX	(EPA SW-846 Method 8021B or 8260B)	0
Benzene	(EPA SW-846 Method 8021B or 8260B)	0

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

On what estimated date will the remediation commence	05/10/2023
On what date will (or did) the final sampling or liner inspection occur	06/21/2024
On what date will (or was) the remediation complete(d)	06/21/2024
What is the estimated surface area (in square feet) that will be reclaimed	526
What is the estimated volume (in cubic yards) that will be reclaimed	30
What is the estimated surface area (in square feet) that will be remediated	526
What is the estimated volume (in cubic yards) that will be remediated	30

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

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

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QUESTIONS, Page 4

Action 381234

QUESTIONS (continued)

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:	260297
	Action Number:	381234
	Action Type:	
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

Remediation Plan (continued)	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: BTA ENSOLUM Title: Environmental Manager Email: rramos@btaoil.com Date: 09/06/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 5

Action 381234

QUESTIONS (continued)

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 381234
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

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

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

QUESTIONS, Page 6

Action 381234

QUESTIONS (continued)

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:
	260297
	Action Number:
	381234
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	381256
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	06/21/2024
What was the (estimated) number of samples that were to be gathered	4
What was the sampling surface area in square feet	526

Remediation Closure Request

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

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	526
What was the total volume (cubic yards) remediated	30
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	526
What was the total volume (in cubic yards) reclaimed	30
Summarize any additional remediation activities not included by answers (above)	Initial response efforts, excavation of impacted soil, and natural attenuation have mitigated impacts at this Site. Depth to groundwater was determined to be greater than 55 feet bgs within 0.5 miles of the Site and no 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 NRM2016045357.

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

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

I hereby agree and sign off to the above statement	Name: BTA ENSOLUM Title: Environmental Manager Email: rramos@btaoil.com Date: 09/06/2024
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District I

1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS, Page 7

Action 381234

QUESTIONS (continued)

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:	260297
	Action Number:	381234
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Reclamation Report	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	526
What was the total volume of replacement material (in cubic yards) for this site	30
<i>Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.</i>	
Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseeding commence(d)	06/10/2024
Summarize any additional reclamation activities not included by answers (above)	Following backfill activities, the disturbed area was contoured to match the surrounding topography and the surface was prepared for seeding. Upon confirmation that the excavation was backfilled with non-waste containing material, the disturbed pasture area was seeded with a certified weed-free seed mix. The BLM seed mix #1 for loamy sites was used to seed the Site. The seed mix was doubled and distributed with a broadcast seed spreader and harrowed in. The Site will be monitored for vegetation growth to ensure that reclama
<i>The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseeding plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.	
I hereby agree and sign off to the above statement	Name: BTA ENSOLUM Title: Environmental Manager Email: rramos@btaoil.com Date: 09/06/2024

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QUESTIONS, Page 8

Action 381234

QUESTIONS (continued)

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:
	260297
	Action Number:
	381234
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

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

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CONDITIONS

Action 381234

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 381234
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

CONDITIONS

Created By	Condition	Condition Date
scwells	None	9/27/2024