



September 19, 2022

District 1  
New Mexico Oil Conservation Division  
1625 North French Drive  
Hobbs, New Mexico 88240

**Re: Closure Request  
Maddox Federal B #1 Well Site  
Incident Number NAPP2211065721  
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 site assessment, excavation, and soil sampling activities performed at the Maddox Federal B #1 Well Site (Site). The purpose of the site assessment, excavation, and soil sampling activities was to address impacts to soil resulting from a crude oil and natural gas release at the Site. Based on the excavation activities and laboratory analytical results from the soil sampling events, BTA is submitting this Closure Request, describing remediation that has occurred and requesting closure for Incident Number NAPP2211065721.

## **SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit F, Section 35, Township 22 South, Range 34 East, in Lea County, New Mexico (32.0598° N, 103.60435° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On April 20, 2022, during the plug and abandonment first circulation of the well, the blowout preventer (BOP) was not closed correctly around the tubing, resulting in the release of approximately 67 barrels (bbls) of crude oil and 3,000 cubic feet (3 MCF) of natural gas onto the well pad. A vacuum truck was dispatched to the Site to recover free-standing fluids; approximately 60 bbls of crude oil was recovered. BTA reported the release immediately to the New Mexico Oil Conservation Division (NMOCD) via NOR filed on April 20, 2022 and submitted a Release Notification Form C-141 (Form C-141) on May 5, 2022. The release was assigned Incident Number NAPP2211065721.

## **SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to



groundwater data is New Mexico Office of the State Engineer (NMOSE) Well C-01802, located approximately 0.6 miles northeast of the Site. The groundwater well has a reported depth to groundwater of 105 feet bgs and a total depth of 200 feet bgs. Ground surface elevation at the groundwater well location is 3,417 feet above mean sea level (amsl), which is approximately 9 feet higher in elevation than the Site. All wells used for depth to water determination are depicted on Figure 1 and the referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is an intermittent riverine, located approximately 1,206 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table 1 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: 20,000 mg/kg

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

## SITE ASSESSMENT ACTIVITIES AND ANALYTICAL RESULTS

On June 16, 2022 and July 12, 2022, Ensolum personnel completed Site visits to evaluate the release extent based on information provided on the Form C-141 and visual observations. Nine preliminary assessment soil samples (SS01 through SS09) were collected within and around the release extent at a depth of approximately 0.5 feet bgs to assess the lateral extent of the release. The preliminary soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride Hach® chloride QuanTab® test strips. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site visit and a photographic log is included in Appendix B.

The preliminary soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH- GRO, TPH- DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method SM4500.

Laboratory analytical results for preliminary soil samples SS05 through SS09, collected within the release extent, indicated TPH-GRO/TPH-DRO, TPH, and/or chloride concentrations exceeded the Closure Criteria. Laboratory analytical results for preliminary samples SS01 through SS04, collected outside the release extent, indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride



concentrations were compliant with the most stringent Table 1 Closure Criteria and confirmed the lateral extent of the release. Based on visible staining in the release area and laboratory analytical results for preliminary soil samples SS05 through SS09, additional remediation activities appeared to be warranted.

## EXCAVATION SOIL SAMPLING ACTIVITIES

Between August 1 and August 29, 2022, Ensolum personnel were at the Site to oversee excavation activities. Impacted soil was excavated from the release area as indicated by visible staining and laboratory analytical results for preliminary soil samples SS05 through SS09. Excavation activities completed on pad, were performed using a track-mounted backhoe and transport vehicles. To direct excavation activities, soil was screened for VOCs and chloride. The excavation was completed to depths ranging from 4 feet bgs to 5 feet bgs. Photographic documentation of the excavation activities is included in Appendix B.

Following removal of the impacted soil, 5-point composite soil samples were collected every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS40 were collected from the floor of the excavation at depths ranging from 4 feet to 5 feet bgs. Composite soil samples SW01 through SW09 were collected from the sidewalls of the excavation from depths ranging from the ground surface to 4 feet bgs. The soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 3.

The excavation area measured approximately 8,019 square feet. A total of approximately 1,485 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the Northern Delaware Basin Landfill in Lea County, New Mexico.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for excavation floor samples FS01 through FS19 and FS21 through FS40 indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Excavation sidewall soil samples SW01, SW04, and SW06 indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Laboratory analytical results for excavation floor sample FS20 and excavation sidewall samples SW02, SW03, and SW05 initially indicated TPH and/or TPH-GRO/TPH-DRO and chloride concentrations exceeded the Closure Criteria. Additional soil was removed and subsequent excavation floor sample FS20A and sidewall samples SW07 through SW09, collected from the final excavation extent, indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included as Appendix C.

## CLOSURE REQUEST

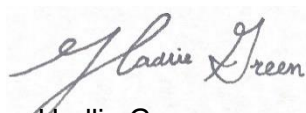
Site assessment and excavation activities were conducted at the Site to address the April 20, 2022, crude oil and natural gas release. Laboratory analytical results for excavation soil samples, collected from the final excavation extent, indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria and the applied reclamation requirement. Based on the soil sample analytical results, no further remediation appears to be required. BTA will backfill the excavation with material purchased locally and recontour the Site following reclamation of the remainder of the pad.



Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. BTA believes these remedial actions are protective of human health, the environment, and groundwater. As such, BTA respectfully requests closure for Incident Number NAPP2211065721. The Form C-141 is included as Appendix E.

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

Sincerely,  
**Ensolum, LLC**



Hadlie Green  
Staff Geologist



Tacoma Morrissey  
Senior Geologist

cc: Bob Hall, BTA Oil Producers, LLC  
Bureau of Land Management

Appendices:

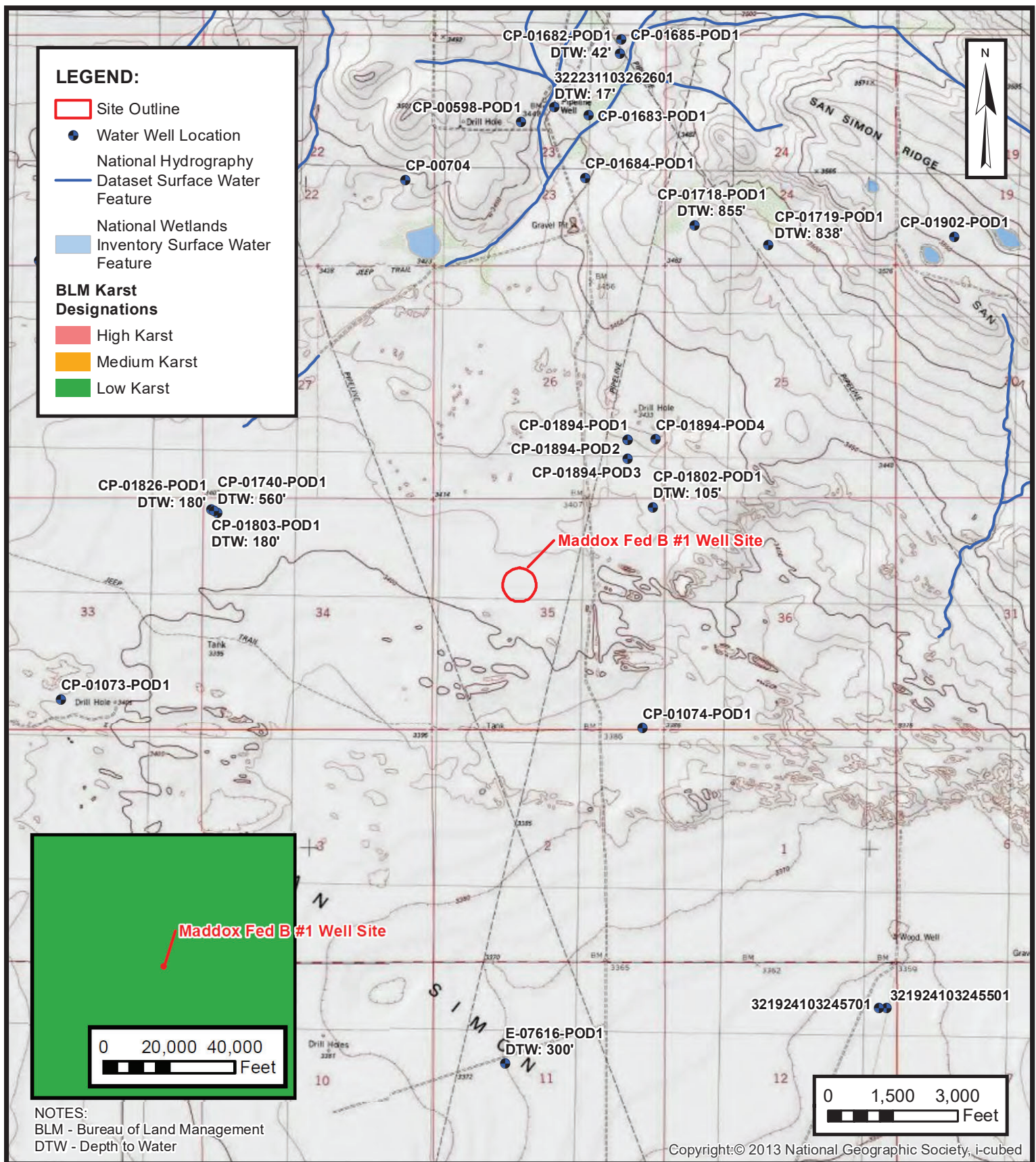
Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix D	NMOCD Sample Notification
Appendix E	Final C-141





FIGURES

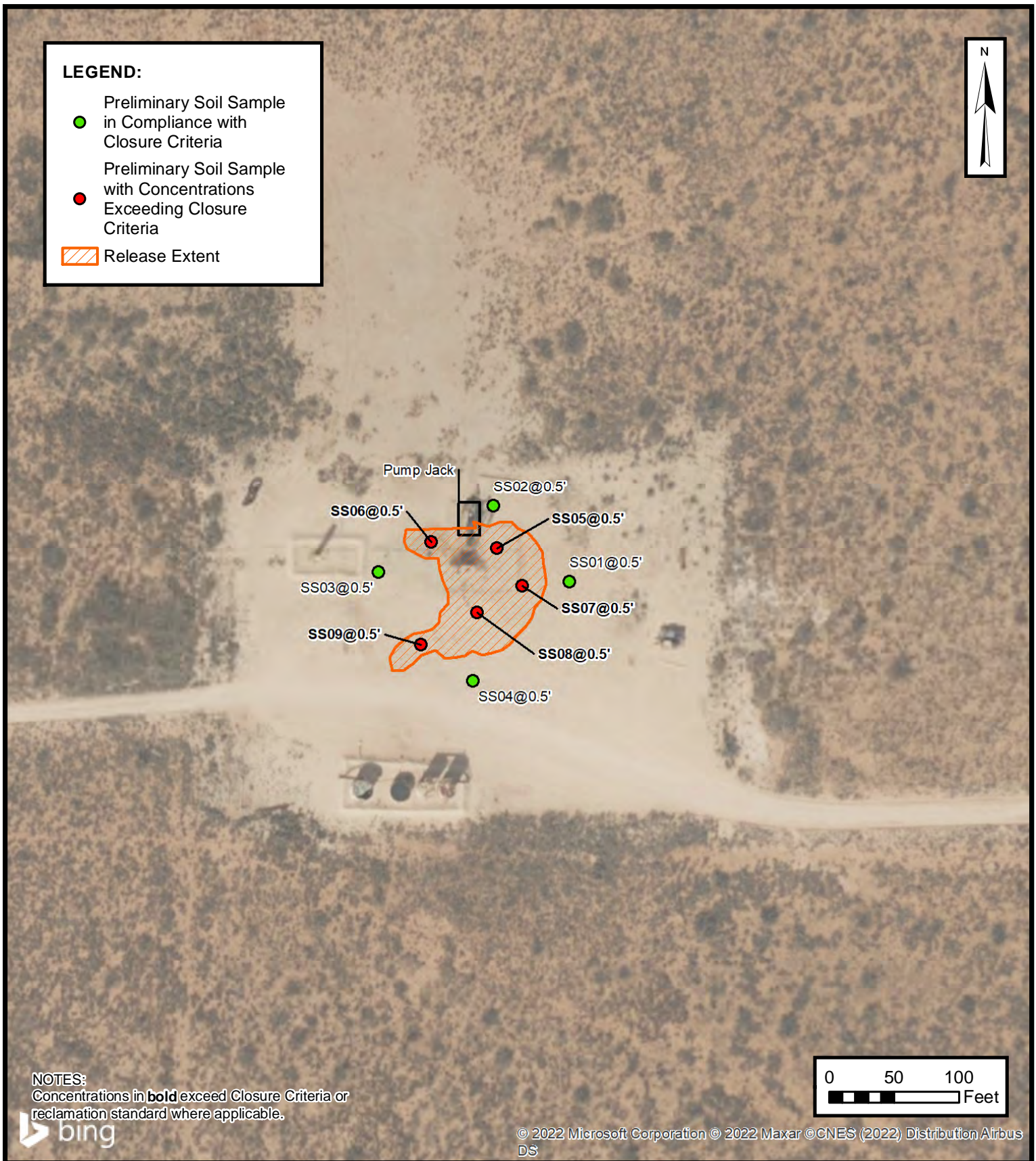


**SITE RECEPTOR MAP**

BTA OIL PRODUCERS, LLC  
 MADDOX FED B #1 WELL SITE  
 NAPP2211065721  
 Unit F Sec 35 T22S R34E  
 Lea County, New Mexico

**FIGURE****1**





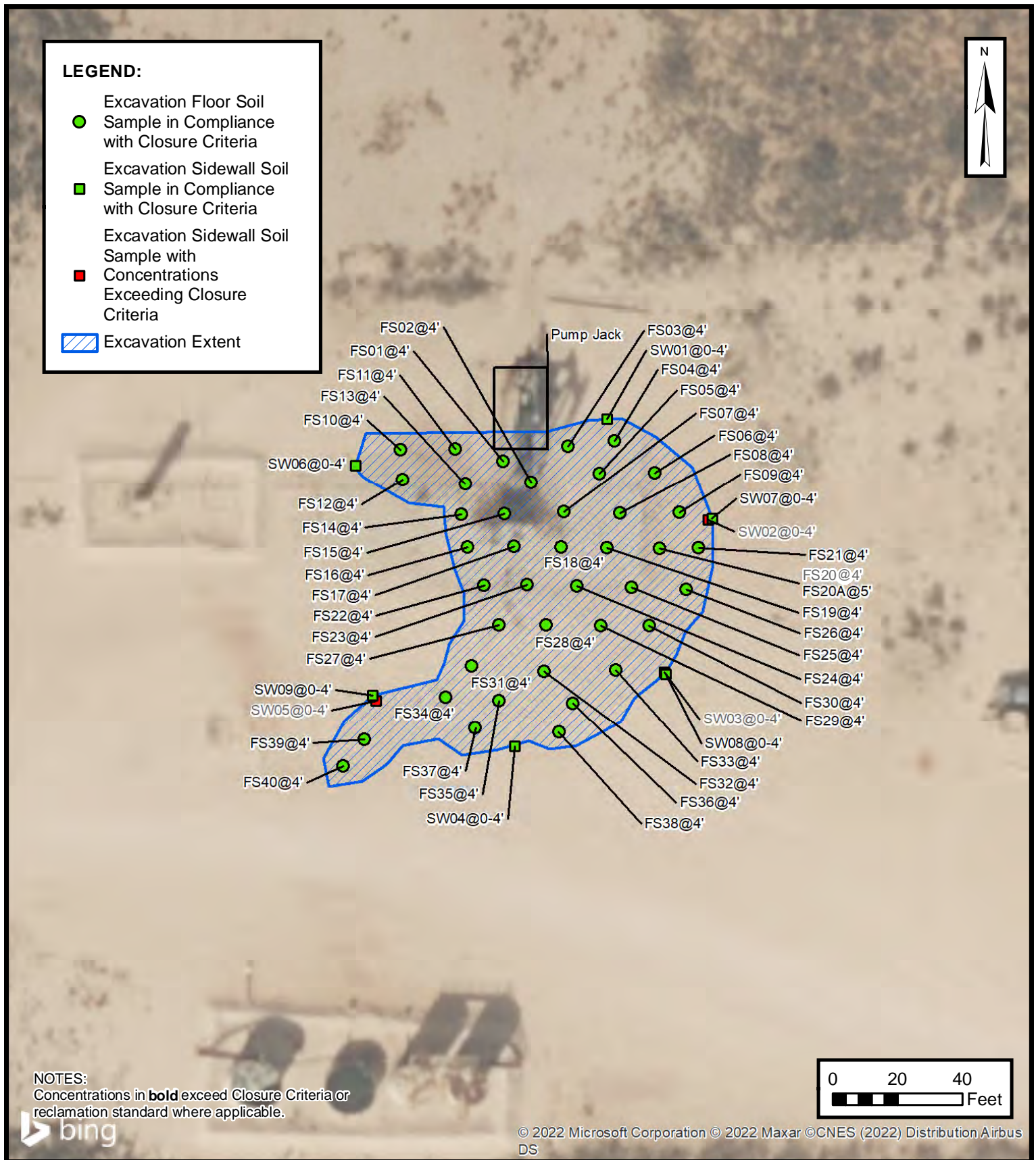
### PRELIMINARY SOIL SAMPLE LOCATIONS

BTA OIL PRODUCERS, LLC  
MADDOX FEDERAL B #1 WELL SITE  
NAPP2211065721  
Unit F Sec 35 T22S R34E  
Lea County, New Mexico

FIGURE

2





## EXCAVATION SOIL SAMPLE LOCATIONS

BTA OIL PRODUCERS, LLC  
MADDOX FEDERAL B #1 WELL SITE  
NAPP2211065721  
Unit F Sec 35 T2S R34E  
Lea County, New Mexico

FIGURE  
**3**





TABLES





**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 Maddox Federal B #1 Well Site  
 BTA Oil Producers, LLC  
 Incident Number NAPP2211065721  
 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 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Preliminary Assessment Soil Samples										
SS01	06/16/2022	0.5	<0.050	<0.300	<10.0	15.0	<10.0	15.0	15.0	96.0
SS02	06/16/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS03	06/16/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS04	06/16/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS05	07/12/2022	0.5	<0.050	1.56	234	9,640	1,770	9,874	11,644	160
SS06	07/12/2022	0.5	<0.050	<0.300	<10.0	70.4	18.0	70.4	88.4	240
SS07	07/12/2022	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS08	07/12/2022	0.5	<0.050	19.4	746	13,100	2,180	13,846	16,026	176
SS09	07/12/2022	0.5	<0.050	<0.300	<10.0	643	200	643	843	19,800
Excavation Floor Soil Samples										
FS01	08/01/2022	4	<0.050	<0.300	<10.0	630	106	630	736	400
FS02	08/01/2022	4	<0.050	<0.300	<10.0	34.5	<10.0	34.5	<10.0	160
FS03	08/02/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
FS04	08/02/2022	4	<0.050	<0.300	<10.0	12.1	<10.0	12.1	12.1	48.0
FS05	08/02/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
FS06	08/02/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
FS07	08/02/2022	4	<0.050	<0.300	<10.0	15.0	<10.0	15.0	15.0	64.0
FS08	08/02/2022	4	<0.050	<0.300	<10.0	10.3	<10.0	10.3	10.3	32.0
FS09	08/02/2022	4	<0.050	<0.300	<10.0	45.3	19.6	45.3	64.9	48.0
FS10	08/02/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
FS11	08/02/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
FS12	08/02/2022	4	<0.050	<0.300	<10.0	10.8	<10.0	10.8	10.8	64.0
FS13	08/02/2022	4	<0.050	<0.300	<10.0	48.7	11.2	48.7	59.9	160
FS14	08/02/2022	4	<0.050	<0.300	<10.0	10.5	<10.0	10.5	10.5	96.0
FS15	08/02/2022	4	<0.050	<0.300	<10.0	27.7	<10.0	27.7	27.7	240
FS16	08/03/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0





**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 Maddox Federal B #1 Well Site  
 BTA Oil Producers, LLC  
 Incident Number NAPP2211065721  
 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 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
FS17	08/03/2022	4	<0.050	<0.300	<10.0	49.6	19.7	49.6	69.3	80.0
FS18	08/03/2022	4	<0.050	<0.300	<10.0	16.9	<10.0	16.9	16.9	80.0
FS19	08/03/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
FS20	08/03/2022	4	<0.050	<0.300	<10.0	2,290	601	2,290	2,891	80.0
FS20A	08/29/2022	5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
FS21	08/03/2022	4	<0.050	<0.300	<10.0	137	46.3	137	183.3	80.0
FS22	08/03/2022	4	<0.050	<0.300	<10.0	44.2	14.8	44.2	59.0	80.0
FS23	08/03/2022	4	<0.050	<0.300	<10.0	51.8	13.3	51.8	65.1	112
FS24	08/03/2022	4	<0.050	<0.300	<10.0	125	24.4	125	149.4	64.0
FS25	08/03/2022	4	<0.050	<0.300	<10.0	234	51.0	234	285	128
FS26	08/03/2022	4	<0.050	<0.300	<10.0	148	22.9	148	170.9	48.0
FS27	08/03/2022	4	<0.050	<0.300	<10.0	196	32.5	196	228.5	48.0
FS28	08/03/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
FS29	08/03/2022	4	<0.050	<0.300	<10.0	374	96.4	374	470.4	48.0
FS30	08/03/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
FS31	08/03/2022	4	<0.050	<0.300	<10.0	153	17.9	153	170.9	80.0
FS32	08/03/2022	4	<0.050	<0.300	<10.0	85.8	15.0	85.8	100.8	48.0
FS33	08/03/2022	4	<0.050	<0.300	<10.0	75.2	<10.0	75.2	75.2	48.0
FS34	08/03/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
FS35	08/03/2022	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
FS36	08/03/2022	4	<0.050	<0.300	<10.0	140	12.8	140	152.8	48.0
FS37	08/03/2022	4	<0.050	<0.300	<10.0	278	28.9	278	306.9	48.0
FS38	08/03/2022	4	<0.050	<0.300	<10.0	80.9	<10.0	80.9	80.9	32.0
FS39	08/03/2022	4	<0.050	<0.300	<10.0	12.0	<10.0	12.0	12.0	16.0
FS40	08/03/2022	4	<0.050	<0.300	<10.0	69.9	<10.0	69.9	69.9	64.0





<b>TABLE 1</b> <b>SOIL SAMPLE ANALYTICAL RESULTS</b> Maddox Federal B #1 Well Site BTA Oil Producers, LLC Incident Number NAPP2211065721 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 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Excavation Sidewall Soil Samples										
SW01	08/03/2022	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SW02	08/03/2022	0 - 4	<0.050	<0.300	<10.0	954	175	954	1,129	752
SW03	08/03/2022	0 - 4	<0.050	<0.300	<10.0	104	10.8	104	114.8	64.0
SW04	08/03/2022	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SW05	08/03/2022	0 - 4	<0.050	<0.300	<10.0	607	127	607	734	80.0
SW06	08/03/2022	0 - 4	<0.050	<0.300	<10.0	67.8	14.3	67.8	82.1	160
SW07	08/29/2022	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SW08	08/29/2022	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SW09	08/29/2022	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0

## Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in bold exceed the NMOCD Table 1 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 represents samples that have been excavated





## APPENDIX A

### Referenced Well Records

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# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) CP-1802		WELL TAG ID NO. 22472		OSE FILE NO(S)			
	WELL OWNER NAME(S) LIMESTONE BASIN PROPERTIES RANCH LLC				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 3300 N A STREET, BLDG 1, STE 220				CITY MIDLAND	STATE TX	ZIP 79705	
	WELL LOCATION (FROM GPS)	LATITUDE DEGREES 32 MINUTES 21 SECONDS 17.43 N	LONGITUDE 103 25 59.15 W	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84				
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE NE 1/4 NE 1/4 NE 1/4 S35 T22S R34E								
2. DRILLING & CASING INFORMATION	LICENSE NO. WD1706		NAME OF LICENSED DRILLER BRYCE WALLACE			NAME OF WELL DRILLING COMPANY ELITE DRILLERS CORPORATION		
	DRILLING STARTED 11/07/19	DRILLING ENDED 11/09/19	DEPTH OF COMPLETED WELL (FT) 200	BORE HOLE DEPTH (FT) 200	DEPTH WATER FIRST ENCOUNTERED (FT) N/A			
	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) N/A			
	DRILLING FLUID: <input type="checkbox"/> AIR <input checked="" type="checkbox"/> MUD ADDITIVES SPECIFY:							
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER SPECIFY:							
	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	160	7 7/8	SDR17 PVC	SPLINE	4.28	SDR17	
	160	200	7 7/8	SDR17 PVC	SPLINE	4.28	SDR17	.32
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						
	25	200	7 7/8	8/16 SILICA SAND	40	POUR		
	0	25	7 7/8	PORTLAND CEMENT	6	POUR		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

FILE NO. <u>CP-1802</u>	POD NO. <u>1</u>	TRN NO. <u>659873</u>
LOCATION <u>Line 22.34.35.222</u>	WELL TAG ID NO. <u>22472</u>	PAGE 1 OF 2



OFFICE OF THE ATTORNEY GENERAL  
MEXICO

Released to Imaging: 9/22/2022 11:39:16 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 hide News 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 =

- 322231103262601

Minimum number of levels = 1

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

## USGS 322231103262601 22S.34E.23.23131

Available data for this site

Groundwater: Field measurements

GO

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°22'47.6", Longitude 103°26'25.3" NAD83

Land-surface elevation 3,452 feet above NAVD88

The depth of the well is 60 feet below land surface.

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

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

### Output formats

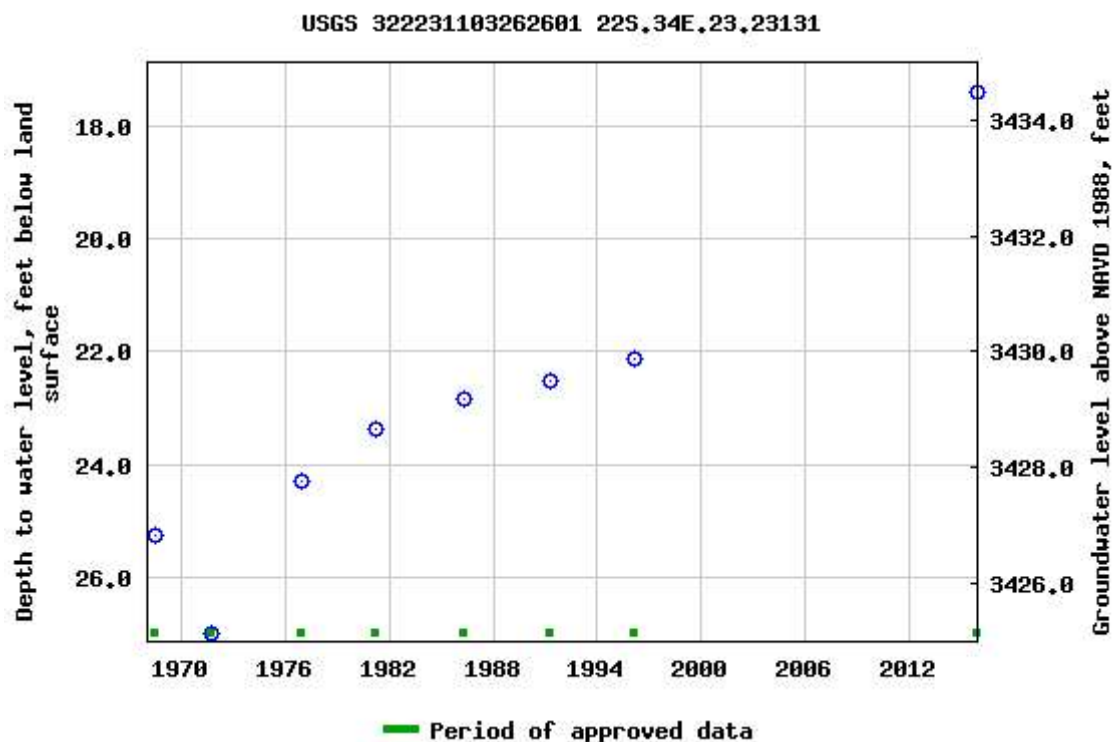
[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)





Breaks in the plot represent a gap of at least one year between field measurements.

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[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

**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: 2022-04-29 16:06:32 EDT

0.66 0.59 nadww01





## APPENDIX B

### Photographic Log

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# Photographic Log

BTA Oil Producers, LLC

Maddox Federal B #1 Well Site

Incident Number NAPP2211065721

Date & Time: Mon, Aug 01, 2022, 09:41:04 MDT  
 Position: +032 349769° / -103.442840° (±15.5ft)  
 Altitude: 3419ft (±11.1ft)  
 Datum: WGS-84  
 Azimuth/Bearing: 315° N45W 5600mils True (±13°)  
 Elevation Angle: -02.0°  
 Horizon Angle: +00.8°  
 Zoom: 0.5X



Photograph 1

Date: August 1, 2022

Description: Photo of excavation extent, facing northwest.

Date & Time: Tue, Aug 02, 2022, 11:40:10 MDT  
 Position: +032 350092° / -103.442926° (±15.5ft)  
 Altitude: 3412ft (±11.1ft)  
 Datum: WGS-84  
 Azimuth/Bearing: 141° S39E 2507mils True (±13°)  
 Elevation Angle: +10.6°  
 Horizon Angle: -00.2°  
 Zoom: 0.5X



Photograph 2

Date: August 2, 2022

Description: Photo of excavation activities, facing southeast.



Photograph 3

Date: August 29, 2022

Description: Photo of excavation extent, facing southeast.



Photograph 4

Date: August 29, 2022

Description: Photo of excavation extent, facing east.





## APPENDIX C

### Laboratory Analytical Reports & Chain of Custody Documentation

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

---

June 21, 2022

TACOMA MORRISSEY

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MADDOX FED B #1 // NAPP2211065721

Enclosed are the results of analyses for samples received by the laboratory on 06/17/22 14:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	06/17/2022	Sampling Date:	06/16/2022
Reported:	06/21/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 // NAPP2211065721	Sampling Condition:	Cool & Intact
Project Number:	03C2012001	Sample Received By:	Tamara Oldaker
Project Location:	BTA - EDDY CO NM		

**Sample ID: SS 01 @ .5' (H222607-01)**

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	06/20/2022	ND	1.88	94.1	2.00	0.751		
Toluene*	<0.050	0.050	06/20/2022	ND	1.89	94.6	2.00	0.552		
Ethylbenzene*	<0.050	0.050	06/20/2022	ND	1.81	90.4	2.00	1.25		
Total Xylenes*	<0.150	0.150	06/20/2022	ND	5.62	93.7	6.00	1.62		
Total BTEX	<0.300	0.300	06/20/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	06/21/2022	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2022	ND	173	86.6	200	3.87	
DRO >C10-C28*	15.0	10.0	06/20/2022	ND	167	83.7	200	9.72	
EXT DRO >C28-C36	<10.0	10.0	06/20/2022	ND					

Surrogate: 1-Chlorooctane 85.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 94.3 % 59.5-142

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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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	06/17/2022	Sampling Date:	06/16/2022
Reported:	06/21/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 // NAPP2211065721	Sampling Condition:	Cool & Intact
Project Number:	03C2012001	Sample Received By:	Tamara Oldaker
Project Location:	BTA - EDDY CO NM		

**Sample ID: SS 02 @ .5' (H222607-02)**

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	06/20/2022	ND	1.88	94.1	2.00	0.751	
Toluene*	<0.050	0.050	06/20/2022	ND	1.89	94.6	2.00	0.552	
Ethylbenzene*	<0.050	0.050	06/20/2022	ND	1.81	90.4	2.00	1.25	
Total Xylenes*	<0.150	0.150	06/20/2022	ND	5.62	93.7	6.00	1.62	
Total BTX	<0.300	0.300	06/20/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/21/2022	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2022	ND	173	86.6	200	3.87	
DRO >C10-C28*	<10.0	10.0	06/20/2022	ND	167	83.7	200	9.72	
EXT DRO >C28-C36	<10.0	10.0	06/20/2022	ND					

Surrogate: 1-Chlorooctane 89.7 % 66.9-136

Surrogate: 1-Chlorooctadecane 99.4 % 59.5-142

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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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	06/17/2022	Sampling Date:	06/16/2022
Reported:	06/21/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 // NAPP2211065721	Sampling Condition:	Cool & Intact
Project Number:	03C2012001	Sample Received By:	Tamara Oldaker
Project Location:	BTA - EDDY CO NM		

**Sample ID: SS 03 @ .5' (H222607-03)**

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	06/20/2022	ND	1.88	94.1	2.00	0.751		
Toluene*	<0.050	0.050	06/20/2022	ND	1.89	94.6	2.00	0.552		
Ethylbenzene*	<0.050	0.050	06/20/2022	ND	1.81	90.4	2.00	1.25		
Total Xylenes*	<0.150	0.150	06/20/2022	ND	5.62	93.7	6.00	1.62		
Total BTX	<0.300	0.300	06/20/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/21/2022	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/21/2022	ND	173	86.6	200	3.87	
DRO >C10-C28*	<10.0	10.0	06/21/2022	ND	167	83.7	200	9.72	
EXT DRO >C28-C36	<10.0	10.0	06/21/2022	ND					

Surrogate: 1-Chlorooctane 85.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 94.7 % 59.5-142

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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	06/17/2022	Sampling Date:	06/16/2022
Reported:	06/21/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 // NAPP2211065721	Sampling Condition:	Cool & Intact
Project Number:	03C2012001	Sample Received By:	Tamara Oldaker
Project Location:	BTA - EDDY CO NM		

**Sample ID: SS 04 @ .5' (H222607-04)**

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	06/20/2022	ND	1.88	94.1	2.00	0.751	
Toluene*	<0.050	0.050	06/20/2022	ND	1.89	94.6	2.00	0.552	
Ethylbenzene*	<0.050	0.050	06/20/2022	ND	1.81	90.4	2.00	1.25	
Total Xylenes*	<0.150	0.150	06/20/2022	ND	5.62	93.7	6.00	1.62	
Total BTX	<0.300	0.300	06/20/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/21/2022	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/21/2022	ND	173	86.6	200	3.87	
DRO >C10-C28*	<10.0	10.0	06/21/2022	ND	167	83.7	200	9.72	
EXT DRO >C28-C36	<10.0	10.0	06/21/2022	ND					

Surrogate: 1-Chlorooctane 85.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 94.3 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





---

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---

### Notes and Definitions

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

---

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

---

Celey D. Keene, Lab Director/Quality Manager





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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]





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

July 19, 2022

TACOMA MORRISSEY

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MADDOX FED B #1 // NAPP2211065721

Enclosed are the results of analyses for samples received by the laboratory on 07/13/22 10:52.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	07/13/2022	Sampling Date:	07/12/2022
Reported:	07/19/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 // NAPP2211065721	Sampling Condition:	Cool & Intact
Project Number:	03C2012001 (32.34997, - 103.44293)	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - EDDY CO NM		

**Sample ID: SS 05 @ 0.5' (H223040-01)**

BTX 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/18/2022	ND	2.04	102	2.00	10.4	
Toluene*	0.126	0.050	07/18/2022	ND	2.14	107	2.00	10.9	
Ethylbenzene*	0.117	0.050	07/18/2022	ND	2.18	109	2.00	10.9	
Total Xylenes*	1.32	0.150	07/18/2022	ND	6.62	110	6.00	10.1	
Total BTX	1.56	0.300	07/18/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 226 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	07/15/2022	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	234	100	07/15/2022	ND	168	84.1	200	15.8	
DRO >C10-C28*	9640	100	07/15/2022	ND	177	88.4	200	14.7	
EXT DRO >C28-C36	1770	100	07/15/2022						

Surrogate: 1-Chlorooctane 176 % 43-149

Surrogate: 1-Chlorooctadecane 234 % 42.5-161

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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 07/13/2022  
Reported: 07/19/2022  
Project Name: MADDOX FED B #1 // NAPP2211065721  
Project Number: 03C2012001 (32.34997, - 103.44293)  
Project Location: BTA - EDDY CO NM

Sampling Date: 07/12/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 06 @ 0.5' (H223040-02)**

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	07/16/2022	ND	2.04	102	2.00	10.4		
Toluene*	<0.050	0.050	07/16/2022	ND	2.14	107	2.00	10.9		
Ethylbenzene*	<0.050	0.050	07/16/2022	ND	2.18	109	2.00	10.9		
Total Xylenes*	<0.150	0.150	07/16/2022	ND	6.62	110	6.00	10.1		
Total BTX	<0.300	0.300	07/16/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	07/15/2022	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	184	91.9	200	20.0	
DRO >C10-C28*	70.4	10.0	07/15/2022	ND	182	90.9	200	18.4	
EXT DRO >C28-C36	18.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 79.7 % 43-149

Surrogate: 1-Chlorooctadecane 94.8 % 42.5-161

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 07/13/2022  
Reported: 07/19/2022  
Project Name: MADDOX FED B #1 // NAPP2211065721  
Project Number: 03C2012001 (32.34997, - 103.44293)  
Project Location: BTA - EDDY CO NM

Sampling Date: 07/12/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 07 @ 0.5' (H223040-03)**

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	07/16/2022	ND	2.04	102	2.00	10.4		
Toluene*	<0.050	0.050	07/16/2022	ND	2.14	107	2.00	10.9		
Ethylbenzene*	<0.050	0.050	07/16/2022	ND	2.18	109	2.00	10.9		
Total Xylenes*	<0.150	0.150	07/16/2022	ND	6.62	110	6.00	10.1		
Total BTX	<0.300	0.300	07/16/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	07/15/2022	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	184	91.9	200	20.0	
DRO >C10-C28*	<10.0	10.0	07/15/2022	ND	182	90.9	200	18.4	
EXT DRO >C28-C36	<10.0	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 80.0 % 43-149

Surrogate: 1-Chlorooctadecane 90.2 % 42.5-161

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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	07/13/2022	Sampling Date:	07/12/2022
Reported:	07/19/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 // NAPP2211065721	Sampling Condition:	Cool & Intact
Project Number:	03C2012001 (32.34997, - 103.44293)	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - EDDY CO NM		

**Sample ID: SS 08 @ 0.5' (H223040-04)**

BTX 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/18/2022	ND	2.04	102	2.00	10.4	
Toluene*	0.169	0.050	07/18/2022	ND	2.14	107	2.00	10.9	
Ethylbenzene*	2.66	0.050	07/18/2022	ND	2.18	109	2.00	10.9	
Total Xylenes*	16.6	0.150	07/18/2022	ND	6.62	110	6.00	10.1	
Total BTX	19.4	0.300	07/18/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 423 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	07/15/2022	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	746	100	07/15/2022	ND	184	91.9	200	20.0	
DRO >C10-C28*	13100	100	07/15/2022	ND	182	90.9	200	18.4	
EXT DRO >C28-C36	2180	100	07/15/2022	ND					

Surrogate: 1-Chlorooctane 248 % 43-149

Surrogate: 1-Chlorooctadecane 254 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	07/13/2022	Sampling Date:	07/12/2022
Reported:	07/19/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 // NAPP2211065721	Sampling Condition:	Cool & Intact
Project Number:	03C2012001 (32.34997, - 103.44293)	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA - EDDY CO NM		

**Sample ID: SS 09 @ 0.5' (H223040-05)**

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	07/16/2022	ND	2.04	102	2.00	10.4		
Toluene*	<0.050	0.050	07/16/2022	ND	2.14	107	2.00	10.9		
Ethylbenzene*	<0.050	0.050	07/16/2022	ND	2.18	109	2.00	10.9		
Total Xylenes*	<0.150	0.150	07/16/2022	ND	6.62	110	6.00	10.1		
Total BTEx	<0.300	0.300	07/16/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	19800	16.0	07/15/2022	ND	432	108	400	0.00	QM-07	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2022	ND	184	91.9	200	20.0	
DRO >C10-C28*	643	10.0	07/15/2022	ND	182	90.9	200	18.4	
EXT DRO >C28-C36	200	10.0	07/15/2022	ND					

Surrogate: 1-Chlorooctane 76.8 % 43-149

Surrogate: 1-Chlorooctadecane 117 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-04	The RPD for the BS/BSD was outside of historical limits.
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





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: ENSOLVM LLC

## BILL TO

## ANALYSIS REQUEST

Project Manager: TALOMA MORELSEN

P.O. #:

Address: 3100 NATIONAL PARKS HIGHWAY

Company: BTA OIL

City: CLEVELAND

State: NM Zip: 88200

Attn: BOB HALL

Phone #: 337.357.8307

Fax #:

Address: 104 S. PECOS ST.

Project #: 036A012001

Project Owner:

City: Midland

Project Name: Maddox Fed B #1 WELLSITE

State: TX Zip: 79701

Project Location: 32,34947, -103,44293

Phone #:

Sample Name: Converter

Fax #:

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME										
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :												
H333040	SS05 @ 0.5'	G	1	X						07.12.22	955	X	X	X	X						
2	SS06 @ 0.5'	G	1	X						07.12.22	1000	X	X	X	X						
3	SS07 @ 0.5'	G	1	X						07.12.22	1005	X	X	X	X						
4	SS08 @ 0.5'	G	1	X						07.12.22	1015	X	X	X	X						
5	SS09 @ 0.5'	G	1	X						07.12.22	1020	X	X	X	X						
<p>PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</p>																					

Relinquished By:

Received By: *Spadigant*

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

All Results are emailed. Please provide Email address:

Relinquished By:

Date: 10/13/22

Received By:

REMARKS:

Delivered By: (Circle One)

Observed Temp. °C 6.1

Sample Condition Cool/Intact ☒ Yes ☐ No

CHECKED BY: (Initials)

Turnaround Time:

Standard Rush ☐

☒

Bacteria (only) Sample Condition Cool/Intact ☐ Yes ☐ No

Observed Temp. °C

Sampler - UPS - Bus - Other:

Corrected Temp. °C 5.5

☐ Yes ☐ No

*SK*

Thermometer ID #113

Correction Factor -0.5°C

☐ Yes ☐ No

Corrected Temp. °C

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





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August 05, 2022

TACOMA MORRISSEY

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MADDOX FED B #1 WELL SITE

Enclosed are the results of analyses for samples received by the laboratory on 08/01/22 16:45.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/01/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/01/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: STP - 1 (H223397-01)**

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	08/05/2022	ND	1.96	98.2	2.00	3.44	
Toluene*	<0.050	0.050	08/05/2022	ND	2.06	103	2.00	1.01	
Ethylbenzene*	<0.050	0.050	08/05/2022	ND	2.02	101	2.00	2.00	
Total Xylenes*	<0.150	0.150	08/05/2022	ND	6.34	106	6.00	2.70	
Total BTEX	<0.300	0.300	08/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	08/04/2022	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	08/04/2022	ND	206	103	200	2.74	
DRO >C10-C28*	<10.0	10.0	08/04/2022	ND	193	96.7	200	1.93	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 71.8 % 43-149

Surrogate: 1-Chlorooctadecane 84.7 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/01/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/01/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: STP - 2 (H223397-02)**

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	08/05/2022	ND	1.96	98.2	2.00	3.44		
Toluene*	<0.050	0.050	08/05/2022	ND	2.06	103	2.00	1.01		
Ethylbenzene*	<0.050	0.050	08/05/2022	ND	2.02	101	2.00	2.00		
Total Xylenes*	<0.150	0.150	08/05/2022	ND	6.34	106	6.00	2.70		
Total BTEx	<0.300	0.300	08/05/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	08/04/2022	ND	432	108	400	3.64	QR-03	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	206	103	200	2.74	
DRO >C10-C28*	32.5	10.0	08/04/2022	ND	193	96.7	200	1.93	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 81.2 % 43-149

Surrogate: 1-Chlorooctadecane 100 % 42.5-161

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/01/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/01/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 01 (H223397-03)**

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	08/05/2022	ND	1.96	98.2	2.00	3.44		
Toluene*	<0.050	0.050	08/05/2022	ND	2.06	103	2.00	1.01		
Ethylbenzene*	<0.050	0.050	08/05/2022	ND	2.02	101	2.00	2.00		
Total Xylenes*	<0.150	0.150	08/05/2022	ND	6.34	106	6.00	2.70		
Total BTEx	<0.300	0.300	08/05/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	08/04/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	206	103	200	2.74	
DRO >C10-C28*	630	10.0	08/04/2022	ND	193	96.7	200	1.93	
EXT DRO >C28-C36	106	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 77.0 % 43-149

Surrogate: 1-Chlorooctadecane 111 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/01/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/01/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 02 (H223397-04)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/05/2022	ND	1.96	98.2	2.00	3.44	
Toluene*	<0.050	0.050	08/05/2022	ND	2.06	103	2.00	1.01	
Ethylbenzene*	<0.050	0.050	08/05/2022	ND	2.02	101	2.00	2.00	
Total Xylenes*	<0.150	0.150	08/05/2022	ND	6.34	106	6.00	2.70	
Total BTX	<0.300	0.300	08/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	08/04/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	206	103	200	2.74	
DRO >C10-C28*	34.5	10.0	08/04/2022	ND	193	96.7	200	1.93	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 74.1 % 43-149

Surrogate: 1-Chlorooctadecane 93.3 % 42.5-161

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

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

---

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

---

Celey D. Keene, Lab Director/Quality Manager





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

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

[illegible]





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

---

August 05, 2022

TACOMA MORRISSEY

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MADDOX FED B #1 WELL SITE

Enclosed are the results of analyses for samples received by the laboratory on 08/02/22 16:55.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	08/02/2022	Sampling Date:	08/02/2022
Reported:	08/05/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 WELL SITE	Sampling Condition:	Cool & Intact
Project Number:	0302012001	Sample Received By:	Tamara Oldaker
Project Location:	BTA - LEA COUNTY		

**Sample ID: FS - 03 4' (H223438-01)**

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	08/04/2022	ND	2.07	103	2.00	8.33	
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29	
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04	
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25	
Total BTEX	<0.300	0.300	08/04/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 69.9-140

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	08/04/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/03/2022	ND	215	107	200	2.57	
DRO >C10-C28*	<10.0	10.0	08/03/2022	ND	203	101	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	08/03/2022	ND					

Surrogate: 1-Chlorooctane 101 % 43-149

Surrogate: 1-Chlorooctadecane 108 % 42.5-161

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 04 4' (H223438-02)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/04/2022	ND	2.07	103	2.00	8.33	
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29	
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04	
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25	
Total BTX	<0.300	0.300	08/04/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.3 % 69.9-140

Chloride, SM4500CI-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	08/04/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	215	107	200	2.57	
DRO >C10-C28*	12.1	10.0	08/04/2022	ND	203	101	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 99.6 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 05 4' (H223438-03)**

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	08/04/2022	ND	2.07	103	2.00	8.33	
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29	
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04	
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25	
Total BTEx	<0.300	0.300	08/04/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.2 % 69.9-140

Chloride, SM4500CI-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	08/04/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	215	107	200	2.57	
DRO >C10-C28*	<10.0	10.0	08/04/2022	ND	203	101	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 100 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 06 4' (H223438-04)**

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	08/04/2022	ND	2.07	103	2.00	8.33		
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29		
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04		
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25		
Total BTEx	<0.300	0.300	08/04/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.7 % 69.9-140

Chloride, SM4500CI-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	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/05/2022	ND	202	101	200	0.414	
DRO >C10-C28*	<10.0	10.0	08/05/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	<10.0	10.0	08/05/2022	ND					

Surrogate: 1-Chlorooctane 94.8 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 07 4' (H223438-05)**

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	08/04/2022	ND	2.07	103	2.00	8.33		
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29		
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04		
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25		
Total BTEx	<0.300	0.300	08/04/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.8 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/05/2022	ND	202	101	200	0.414	
DRO >C10-C28*	15.0	10.0	08/05/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	<10.0	10.0	08/05/2022	ND					

Surrogate: 1-Chlorooctane 105 % 43-149

Surrogate: 1-Chlorooctadecane 123 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 08 4' (H223438-06)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/04/2022	ND	2.07	103	2.00	8.33		
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29		
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04		
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25		
Total BTEx	<0.300	0.300	08/04/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.6 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	202	101	200	0.414	
DRO >C10-C28*	10.3	10.0	08/04/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 91.6 % 43-149

Surrogate: 1-Chlorooctadecane 99.4 % 42.5-161

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 09 4' (H223438-07)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/04/2022	ND	2.07	103	2.00	8.33		
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29		
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04		
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25		
Total BTEx	<0.300	0.300	08/04/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.0 % 69.9-140

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	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	202	101	200	0.414	
DRO >C10-C28*	45.3	10.0	08/04/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	19.6	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 106 % 43-149

Surrogate: 1-Chlorooctadecane 116 % 42.5-161

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 10 4' (H223438-08)**

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/04/2022	ND	2.07	103	2.00	8.33		
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29		
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04		
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25		
Total BTX	<0.300	0.300	08/04/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.5 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	202	101	200	0.414	
DRO >C10-C28*	<10.0	10.0	08/04/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 100 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 11 4' (H223438-09)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/04/2022	ND	2.07	103	2.00	8.33		
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29		
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04		
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25		
Total BTEx	<0.300	0.300	08/04/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.4 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	202	101	200	0.414	
DRO >C10-C28*	<10.0	10.0	08/04/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 93.2 % 43-149

Surrogate: 1-Chlorooctadecane 101 % 42.5-161

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 12 4' (H223438-10)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/04/2022	ND	2.07	103	2.00	8.33		
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29		
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04		
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25		
Total BTEx	<0.300	0.300	08/04/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.3 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	202	101	200	0.414	
DRO >C10-C28*	10.8	10.0	08/04/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 98.7 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 13 4' (H223438-11)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/04/2022	ND	2.07	103	2.00	8.33	
Toluene*	<0.050	0.050	08/04/2022	ND	2.14	107	2.00	8.29	
Ethylbenzene*	<0.050	0.050	08/04/2022	ND	2.13	107	2.00	8.04	
Total Xylenes*	<0.150	0.150	08/04/2022	ND	6.50	108	6.00	8.25	
Total BTEx	<0.300	0.300	08/04/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.1 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	202	101	200	0.414	
DRO >C10-C28*	48.7	10.0	08/04/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	11.2	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 100 % 43-149

Surrogate: 1-Chlorooctadecane 113 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 14 4' (H223438-12)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/05/2022	ND	2.07	103	2.00	8.33	
Toluene*	<0.050	0.050	08/05/2022	ND	2.14	107	2.00	8.29	
Ethylbenzene*	<0.050	0.050	08/05/2022	ND	2.13	107	2.00	8.04	
Total Xylenes*	<0.150	0.150	08/05/2022	ND	6.50	108	6.00	8.25	
Total BTEX	<0.300	0.300	08/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.6 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	202	101	200	0.414	
DRO >C10-C28*	10.5	10.0	08/04/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 92.3 % 43-149

Surrogate: 1-Chlorooctadecane 103 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/02/2022  
Reported: 08/05/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 0302012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/02/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS - 15 4' (H223438-13)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/05/2022	ND	2.07	103	2.00	8.33		
Toluene*	<0.050	0.050	08/05/2022	ND	2.14	107	2.00	8.29		
Ethylbenzene*	<0.050	0.050	08/05/2022	ND	2.13	107	2.00	8.04		
Total Xylenes*	<0.150	0.150	08/05/2022	ND	6.50	108	6.00	8.25		
Total BTEX	<0.300	0.300	08/05/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.6 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	08/04/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/04/2022	ND	202	101	200	0.414	
DRO >C10-C28*	27.7	10.0	08/04/2022	ND	215	107	200	5.61	
EXT DRO >C28-C36	<10.0	10.0	08/04/2022	ND					

Surrogate: 1-Chlorooctane 93.4 % 43-149

Surrogate: 1-Chlorooctadecane 102 % 42.5-161

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\*=Accredited Analyte

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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: ENSOLVUM LLC		P.O. #:		BILL TO		ANALYSIS REQUEST															
Project Manager: Tacoma Morrissey		Company: BTA Oil																			
Address: 601 Marland St Suite 400		Attn: Bob Hall																			
City: Midland		Address: 1048005 St																			
State: TX Zip: 79701		City: Midland																			
Phone #: 337 257 8307 Fax #:		State: TX Zip: 79701																			
Project #: 03C2012001 Project Owner:		Phone #: 432 312 2283																			
Project Name: Maxx Fed B #1 Well Site		Fax #:																			
Project Location: Lea County																					
Sample Name: Samantha Mackenzie																					
FOR LAB USE ONLY																					
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.		MATRIX		PRESERV		SAMPLING													
		# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :										
1	FS-03	4'	C	1	X																
2	FS-04	4'	C	1	X																
3	FS-05	4'	C	1	X																
4	FS-06	4'	C	1	X																
5	FS-07	4'	C	1	X																
6	FS-08	4'	C	1	X																
7	FS-09	4'	C	1	X																
8	FS-10	4'	C	1	X																
9	FS-11	4'	C	1	X																
10	FS-12	4'	C	1	X																
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.		Relinquished By: <i>Samantha Mackenzie</i>		Date: 8/2/22		Received By: <i>Samantha Mackenzie</i>		Date: 8/2/22		Time: 1456		TPH 8015		BTEx 8021 B		Chlorides 4500					
Relinquished By: <i>Samantha Mackenzie</i>		Date: 8/2/22		Time: 1455		Received By: <i>Samantha Mackenzie</i>		Date: 8/2/22		Time: 1502											
Delivered By: (Circle One)		Observed Temp. °C 4.0		Sample Condition		CHECKED BY: (Initials)		Turnaround Time:		Standard		Bacteria (only)		Sample Condition							
Sampler - UPS - Bus - Other:		Corrected Temp. °C 3.4		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Thermometer ID #113		Correction Factor -0.5°C		Cool <input type="checkbox"/> Intact <input type="checkbox"/>		Yes <input type="checkbox"/> No <input type="checkbox"/>		Observed Temp. °C					
FOR CARDINAL LAB USE ONLY																					

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





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(575) 393-2326 FAX (575) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]





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

August 10, 2022

TACOMA MORRISSEY

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MADDOX FED B #1 WELL SITE

Enclosed are the results of analyses for samples received by the laboratory on 08/03/22 17:00.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 16 4' (H223481-01)**

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	08/08/2022	ND	2.06	103	2.00	2.78		
Toluene*	<0.050	0.050	08/08/2022	ND	2.13	106	2.00	2.25		
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.15	108	2.00	3.78		
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.53	109	6.00	4.34		
Total BTEX	<0.300	0.300	08/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.2 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/08/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	<10.0	10.0	08/09/2022	ND	214	107	200	3.65	QM-07
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 113 % 43-149

Surrogate: 1-Chlorooctadecane 128 % 42.5-161

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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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 17 4' (H223481-02)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2022	ND	2.06	103	2.00	2.78	
Toluene*	<0.050	0.050	08/08/2022	ND	2.13	106	2.00	2.25	
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.15	108	2.00	3.78	
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.53	109	6.00	4.34	
Total BTX	<0.300	0.300	08/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.4 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	08/08/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	49.6	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	19.7	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 80.0 % 43-149

Surrogate: 1-Chlorooctadecane 82.2 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 18 4' (H223481-03)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2022	ND	2.06	103	2.00	2.78	
Toluene*	<0.050	0.050	08/08/2022	ND	2.13	106	2.00	2.25	
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.15	108	2.00	3.78	
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.53	109	6.00	4.34	
Total BTX	<0.300	0.300	08/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.7 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	08/08/2022	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	16.9	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 90.4 % 43-149

Surrogate: 1-Chlorooctadecane 90.3 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 19 4' (H223481-04)**

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	08/08/2022	ND	1.95	97.3	2.00	1.08	QM-07	
Toluene*	<0.050	0.050	08/08/2022	ND	2.06	103	2.00	0.0598		
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.00	100	2.00	0.254		
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.25	104	6.00	0.596		
Total BTEX	<0.300	0.300	08/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	08/08/2022	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	<10.0	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 94.5 % 43-149

Surrogate: 1-Chlorooctadecane 91.9 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 20 4' (H223481-05)**

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	08/08/2022	ND	1.95	97.3	2.00	1.08		
Toluene*	<0.050	0.050	08/08/2022	ND	2.06	103	2.00	0.0598		
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.00	100	2.00	0.254		
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.25	104	6.00	0.596		
Total BTEX	<0.300	0.300	08/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	08/08/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	2290	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	601	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 99.3 % 43-149

Surrogate: 1-Chlorooctadecane 140 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 21 4' (H223481-06)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/08/2022	ND	1.95	97.3	2.00	1.08		
Toluene*	<0.050	0.050	08/08/2022	ND	2.06	103	2.00	0.0598		
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.00	100	2.00	0.254		
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.25	104	6.00	0.596		
Total BTEX	<0.300	0.300	08/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	08/08/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	137	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	46.3	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 93.4 % 43-149

Surrogate: 1-Chlorooctadecane 102 % 42.5-161

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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 22 4' (H223481-07)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/08/2022	ND	1.95	97.3	2.00	1.08		
Toluene*	<0.050	0.050	08/08/2022	ND	2.06	103	2.00	0.0598		
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.00	100	2.00	0.254		
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.25	104	6.00	0.596		
Total BTEx	<0.300	0.300	08/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	08/08/2022	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	44.2	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	14.8	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 91.8 % 43-149

Surrogate: 1-Chlorooctadecane 93.2 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 23 4' (H223481-08)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2022	ND	1.95	97.3	2.00	1.08	
Toluene*	<0.050	0.050	08/08/2022	ND	2.06	103	2.00	0.0598	
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.00	100	2.00	0.254	
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.25	104	6.00	0.596	
Total BTEx	<0.300	0.300	08/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	08/08/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	51.8	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	13.3	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 89.2 % 43-149

Surrogate: 1-Chlorooctadecane 92.9 % 42.5-161

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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 24 4' (H223481-09)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/08/2022	ND	1.95	97.3	2.00	1.08	
Toluene*	<0.050	0.050	08/08/2022	ND	2.06	103	2.00	0.0598	
Ethylbenzene*	<0.050	0.050	08/08/2022	ND	2.00	100	2.00	0.254	
Total Xylenes*	<0.150	0.150	08/08/2022	ND	6.25	104	6.00	0.596	
Total BTEX	<0.300	0.300	08/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	08/08/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	125	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	24.4	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 114 % 43-149

Surrogate: 1-Chlorooctadecane 121 % 42.5-161

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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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 25 4' (H223481-10)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/09/2022	ND	1.95	97.3	2.00	1.08		
Toluene*	<0.050	0.050	08/09/2022	ND	2.06	103	2.00	0.0598		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.00	100	2.00	0.254		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.25	104	6.00	0.596		
Total BTEX	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	210	105	200	1.16	
DRO >C10-C28*	234	10.0	08/09/2022	ND	214	107	200	3.65	
EXT DRO >C28-C36	51.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 88.3 % 43-149

Surrogate: 1-Chlorooctadecane 97.5 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 26 4' (H223481-11)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2022	ND	1.95	97.3	2.00	1.08	
Toluene*	<0.050	0.050	08/09/2022	ND	2.06	103	2.00	0.0598	
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.00	100	2.00	0.254	
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.25	104	6.00	0.596	
Total BTEX	<0.300	0.300	08/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/08/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	148	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	22.9	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 84.4 % 43-149

Surrogate: 1-Chlorooctadecane 99.3 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 27 4' (H223481-12)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEX	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.8 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	196	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	32.5	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 83.6 % 43-149

Surrogate: 1-Chlorooctadecane 99.2 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 28 4' (H223481-13)**

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTX	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.8 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	<10.0	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 77.4 % 43-149

Surrogate: 1-Chlorooctadecane 90.7 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 29 4' (H223481-14)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.2 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	374	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	96.4	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 76.8 % 43-149

Surrogate: 1-Chlorooctadecane 94.1 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 30 4' (H223481-15)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.8 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	<10.0	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 82.1 % 43-149

Surrogate: 1-Chlorooctadecane 97.4 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 31 4' (H223481-16)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEX	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.9 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	153	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	17.9	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 89.1 % 43-149

Surrogate: 1-Chlorooctadecane 108 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 32 4' (H223481-17)**

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	08/09/2022	ND	2.00	100	2.00	5.48	
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69	
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94	
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93	
Total BTEx	<0.300	0.300	08/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/08/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	85.8	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	15.0	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 90.8 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 33 4' (H223481-18)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.7 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/08/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	75.2	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 86.7 % 43-149

Surrogate: 1-Chlorooctadecane 108 % 42.5-161

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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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 34 4' (H223481-19)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEX	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.7 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/08/2022	ND	212	106	200	0.889	
DRO >C10-C28*	<10.0	10.0	08/08/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/08/2022	ND					

Surrogate: 1-Chlorooctane 82.6 % 43-149

Surrogate: 1-Chlorooctadecane 94.9 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 35 4' (H223481-20)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.3 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	<10.0	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 81.0 % 43-149

Surrogate: 1-Chlorooctadecane 93.1 % 42.5-161

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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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 36 (H223481-21)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.3 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	140	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	12.8	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 73.6 % 43-149

Surrogate: 1-Chlorooctadecane 103 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 37 (H223481-22)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.4 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/08/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	278	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	28.9	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 83.3 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 38 (H223481-23)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	08/09/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	80.9	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 78.9 % 43-149

Surrogate: 1-Chlorooctadecane 103 % 42.5-161

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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 39 (H223481-24)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	08/09/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	12.0	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 77.9 % 43-149

Surrogate: 1-Chlorooctadecane 94.1 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: FS 40 (H223481-25)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2022	ND	2.00	100	2.00	5.48	
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69	
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94	
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93	
Total BTX	<0.300	0.300	08/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.5 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/09/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	69.9	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 85.1 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SW 01 (H223481-26)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	08/09/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	<10.0	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 83.1 % 43-149

Surrogate: 1-Chlorooctadecane 101 % 42.5-161

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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  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SW 02 (H223481-27)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2022	ND	2.00	100	2.00	5.48	
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69	
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94	
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93	
Total BTX	<0.300	0.300	08/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	08/09/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	954	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	175	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 79.7 % 43-149

Surrogate: 1-Chlorooctadecane 122 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SW 03 (H223481-28)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2022	ND	2.00	100	2.00	5.48	
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69	
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94	
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93	
Total BTX	<0.300	0.300	08/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.5 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/09/2022	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	08/09/2022	ND	212	106	200	0.889	
DRO >C10-C28*	104	10.0	08/09/2022	ND	203	102	200	5.97	
EXT DRO >C28-C36	10.8	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 81.1 % 43-149

Surrogate: 1-Chlorooctadecane 96.7 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SW 04 (H223481-29)**

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	08/09/2022	ND	2.00	100	2.00	5.48	
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69	
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94	
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93	
Total BTEx	<0.300	0.300	08/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	08/09/2022	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	08/09/2022	ND	191	95.7	200	1.17	
DRO >C10-C28*	<10.0	10.0	08/09/2022	ND	201	101	200	4.28	
EXT DRO >C28-C36	<10.0	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 96.1 % 43-149

Surrogate: 1-Chlorooctadecane 107 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SW 05 (H223481-30)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/09/2022	ND	2.00	100	2.00	5.48	
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69	
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94	
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93	
Total BTX	<0.300	0.300	08/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	08/09/2022	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	08/09/2022	ND	191	95.7	200	1.17	
DRO >C10-C28*	607	10.0	08/09/2022	ND	201	101	200	4.28	
EXT DRO >C28-C36	127	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 95.3 % 43-149

Surrogate: 1-Chlorooctadecane 136 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
TACOMA MORRISSEY  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 08/03/2022  
Reported: 08/10/2022  
Project Name: MADDOX FED B #1 WELL SITE  
Project Number: 03C2012001  
Project Location: BTA - LEA COUNTY

Sampling Date: 08/03/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SW 06 (H223481-31)**

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	08/09/2022	ND	2.00	100	2.00	5.48		
Toluene*	<0.050	0.050	08/09/2022	ND	2.08	104	2.00	6.69		
Ethylbenzene*	<0.050	0.050	08/09/2022	ND	2.11	105	2.00	6.94		
Total Xylenes*	<0.150	0.150	08/09/2022	ND	6.38	106	6.00	6.93		
Total BTEx	<0.300	0.300	08/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.4 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	08/09/2022	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	08/09/2022	ND	220	110	200	8.77	
DRO >C10-C28*	67.8	10.0	08/09/2022	ND	226	113	200	5.17	
EXT DRO >C28-C36	14.3	10.0	08/09/2022	ND					

Surrogate: 1-Chlorooctane 84.1 % 43-149

Surrogate: 1-Chlorooctadecane 86.1 % 42.5-161

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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

<b>Company Name:</b> Ensolum, LLC <b>Project Manager:</b> Tacoma Morrissey <b>Address:</b> 601 N Mainfield St. Suite 400 <b>City:</b> O. Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> (387) 257 - 8307 <b>Fax #:</b> <b>Project #:</b> 03C2012001 <b>Project Owner:</b> <b>Project Name:</b> Maddox Fed B #1 well site <b>Project Location:</b> Lee County <b>Sampler Name:</b> Samantha Markkase <b>FOR LAB USE ONLY</b>				<b>P.O. #:</b> <b>Company:</b> BTA O.I <b>Attn:</b> Bob Hall <b>Address:</b> 104 S Peas St <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> (432) 312-2203 <b>Fax #:</b>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>					
<b>Lab I.D.</b> H023481		<b>Sample I.D.</b>		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER :		ACID/BASE: ICE / COOL OTHER :		DATE TIME		TPH 8015 M BTEX 8021 B Chlorides 4500		NFE 8/3/22 Sam	
				MATRIX		PRESERV.		SAMPLING		DATE TIME		TPH 8015 M BTEX 8021 B Chlorides 4500					
1		FS16		41		C 1		X		8/3/22		0910		X			
2		FS17		41		C 1		X		8/3/22		0912		X			
3		FS18		41		C 1		X		8/3/22		0914		X			
4		FS19		41		C 1		X		8/3/22		0916		X			
5		FS20		41		C 1		X		8/3/22		0918		X			
6		FS21		41		C 1		X		8/3/22		0919		X			
7		FS22		41		C 1		X		8/3/22		0921		X			
8		FS23		41		C 1		X		8/3/22		0925		X			
9		FS24		41		C 1		X		8/3/22		0927		X			
10		FS25		41		C 1		X		8/3/22		0930		X			

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<b>Relinquished By:</b> Samantha Markkase <b>Date:</b> 8/3/22 <b>Time:</b> 1700		<b>Received By:</b> [Signature] <b>Date:</b> <b>Time:</b>		<b>Verbal Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Phone #:</b>		<b>REMARKS:</b> All Results are emailed. Please provide Email address:	
<b>Relinquished By:</b> [Signature] <b>Date:</b> <b>Time:</b>		<b>Received By:</b> [Signature] <b>Date:</b> <b>Time:</b>		<b>Verbal Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Phone #:</b>		<b>REMARKS:</b>	

<b>Delivered By:</b> (Circle One) UPS - Bus - Other:		<b>Observed Temp. °C</b> 1.9 <b>Corrected Temp. °C</b> 1.3		<b>Sample Condition</b> Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		<b>CHECKED BY:</b> [Signature] (Initials)		<b>Turnaround Time:</b>		<b>Standard</b> <input checked="" type="checkbox"/> Rush <input type="checkbox"/>		<b>Bacteria (only)</b> <input type="checkbox"/> <input checked="" type="checkbox"/> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		<b>Sample Condition</b> Observed Temp. °C Corrected Temp. °C	
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(575) 393-2326 FAX (575) 393-2476

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Ensolium, LLC <b>Project Manager:</b> Tacoma Morrissey <b>Address:</b> 601 N Marland St Ste 400 <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> (337) 257 8307 <b>Fax #:</b> <b>Project #:</b> 03C8018001 <b>Project Owner:</b> <b>Project Name:</b> Wabok Fed B #1 Well Site <b>Project Location:</b> Lea County <b>Sampler Name:</b> Samantha Madenize				<b>P.O. #:</b> <b>Company:</b> BTA O:1 <b>Attn:</b> Bob Hall <b>Address:</b> 104 S Peers St <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> (432) 312-2203 <b>Fax #:</b>			
<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>			
<b>Lab I.D.</b> 1023481 110532		<b>Sample I.D.</b> FS 26 FS 27 FS 28 FS 29 FS 30 FS 31 FS 32 FS 33 FS 34 FS 35		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		DATE TIME TPIH 8015 M BTEX 8021 B Chlorides 4500 NFE 8/3/22 Sam	
Relinquished By: <i>Samantha Madenize</i> Date: 8/3/22 Time: 1:00		Received By: <i>Shirley Eldridge</i> Date: 8/3/22 Time: 1:00		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:		All Results are emailed. Please provide Email address:	
Relinquished By: <i>Samantha Madenize</i> Date: 8/3/22 Time: 1:00		Received By: <i>Shirley Eldridge</i> Date: 8/3/22 Time: 1:00		REMARKS:		Turnaround Time:	
Delivered By: (Circle One) Sample - UPS - Bus - Other:		Observed Temp. °C Corrected Temp. °C 1.3		Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		CHECKED BY: (Initials) 92	
Thermometer ID #113 Correction Factor -0.6°C		Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Bacteria (only) Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		Observed Temp. °C Corrected Temp. °C		Add'l Phone #:	





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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Ensolum, LLC <b>Project Manager:</b> Taama Morrissey <b>Address:</b> 601 N Marland St. Suite 400 <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> (337) 257-8309 <b>Fax #:</b> <b>Project #:</b> 03C2012001 <b>Project Owner:</b> <b>Project Name:</b> Lee Leahy <b>Project Location:</b> Madox Fed B # Well Site <b>Sample Name:</b> Samantha McKenzie				<b>P.O. #:</b> <b>Company:</b> BTA Oil <b>Attn:</b> Bob Hall <b>Address:</b> 104 S Pecos St <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> (432) 312-2203 <b>Fax #:</b>			
<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>			
FOR LAB USE ONLY		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER MATRIX SOIL OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER:		PRESERV SAMPLING		DATE	
Lab I.D.		Sample I.D.		DATE		TIME	
11023481		FS 36		8/3/22		1020	
21		FS 37		8/3/22		1023	
22		FS 38		8/3/22		1025	
23		FS 39		8/3/22		1027	
24		FS 40		8/3/22		1030	
25		SW 01		8/3/22		1400	
26		SW 02		8/3/22		1402	
27		SW 03		8/3/22		1404	
28		SW 04		8/3/22		1410	
29		SW 05		8/3/22		1413	
30							
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.				Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: All Results are emailed. Please provide Email address:			
<b>Relinquished By:</b> [Signature] <b>Date:</b> 8/3/22 <b>Received By:</b> [Signature] <b>Date:</b> 8/3/22 <b>Time:</b> 7:00 <b>Received By:</b> [Signature]				<b>REMARKS:</b>			
<b>Relinquished By:</b> [Signature] <b>Date:</b> 8/3/22 <b>Received By:</b> [Signature]				<b>REMARKS:</b>			
<b>Delivered By:</b> (Circle One) <b>Sampler - UPS - Bus - Other:</b>				<b>Observed Temp. °C</b> 1.9 <b>Corrected Temp. °C</b> 1.3 <b>Sample Condition</b> <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <b>CHECKED BY:</b> [Signature] <b>Turnaround Time:</b> Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> <b>Thermometer ID #113</b> <b>Correction Factor -0.6°C</b> <b>Bacteria (only) Sample Condition</b> <input type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Observed Temp. °C</b> <b>Corrected Temp. °C</b>			

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





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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Ensolium, LLC <b>Project Manager:</b> Tacoma Marissey <b>Address:</b> 601 N Marisfield St. Suite 400 <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> (339) 257-5301 <b>Fax #:</b> <b>Project #:</b> 03C2018001 <b>Project Owner:</b> <b>Project Name:</b> Madbox Fed B #1 well site <b>Project Location:</b> Lee County <b>Sampler Name:</b> Samantha Madbox <b>FOR LAB USE ONLY</b>				<b>P.O. #:</b> <b>Company:</b> BTM C-1 <b>Attn:</b> Bob Hall <b>Address:</b> 104 S Pecos St <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> (432) 312-2208 <b>Fax #:</b>			
<b>Lab I.D.</b> 1003481 31		<b>Sample I.D.</b> SW06 NFE		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER : DATE TIME		MATRIX PRESERV. SAMPLING	
Date: 8/3/22 Relinquished By: [Signature]		Received By: [Signature] Date: 8/3/22		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID #13 Correction Factor -0.6°C		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: All Results are emailed. Please provide Email address:	
Relinquished By: [Signature]		Received By: [Signature]		REMARKS:		Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Corrected Temp. °C	
Delivered By: (Circle One) UPS - Bus - Other:		Observed Temp. °C Corrected Temp. °C		Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Checked By: [Signature]		Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Corrected Temp. °C	





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---

September 02, 2022

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MADDOX FED B #1 // NAPP2211065721

Enclosed are the results of analyses for samples received by the laboratory on 08/30/22 13:36.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received:	08/30/2022	Sampling Date:	08/29/2022
Reported:	09/02/2022	Sampling Type:	Soil
Project Name:	MADDOX FED B #1 // NAPP2211065721	Sampling Condition:	Cool & Intact
Project Number:	03C2012001	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA-EDDY CO. 32.34997,-103.44293		

**Sample ID: FS 20 A @ 5' (H223976-01)**

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	09/01/2022	ND	2.15	108	2.00	3.87		
Toluene*	<0.050	0.050	09/01/2022	ND	2.09	104	2.00	3.57		
Ethylbenzene*	<0.050	0.050	09/01/2022	ND	2.04	102	2.00	3.02		
Total Xylenes*	<0.150	0.150	09/01/2022	ND	6.30	105	6.00	2.41		
Total BTEX	<0.300	0.300	09/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

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	08/31/2022	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/31/2022	ND	201	101	200	0.945	
DRO >C10-C28*	<10.0	10.0	08/31/2022	ND	217	108	200	2.18	
EXT DRO >C28-C36	<10.0	10.0	08/31/2022	ND					

Surrogate: 1-Chlorooctane 92.1 % 45.3-161

Surrogate: 1-Chlorooctadecane 95.9 % 46.3-178

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 08/30/2022  
Reported: 09/02/2022  
Project Name: MADDOX FED B #1 // NAPP2211065721  
Project Number: 03C2012001  
Project Location: BTA-EDDY CO. 32.34997,-103.44293

Sampling Date: 08/29/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW07 @ 0-4' (H223976-02)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/01/2022	ND	2.15	108	2.00	3.87	
Toluene*	<0.050	0.050	09/01/2022	ND	2.09	104	2.00	3.57	
Ethylbenzene*	<0.050	0.050	09/01/2022	ND	2.04	102	2.00	3.02	
Total Xylenes*	<0.150	0.150	09/01/2022	ND	6.30	105	6.00	2.41	
Total BTX	<0.300	0.300	09/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500CI-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	08/31/2022	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/01/2022	ND	211	106	200	2.06	
DRO >C10-C28*	<10.0	10.0	09/01/2022	ND	213	107	200	0.500	
EXT DRO >C28-C36	<10.0	10.0	09/01/2022	ND					

Surrogate: 1-Chlorooctane 86.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 90.1 % 46.3-178

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 08/30/2022  
Reported: 09/02/2022  
Project Name: MADDOX FED B #1 // NAPP2211065721  
Project Number: 03C2012001  
Project Location: BTA-EDDY CO. 32.34997,-103.44293

Sampling Date: 08/29/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW08 @ 0-4' (H223976-03)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/01/2022	ND	2.15	108	2.00	3.87		
Toluene*	<0.050	0.050	09/01/2022	ND	2.09	104	2.00	3.57		
Ethylbenzene*	<0.050	0.050	09/01/2022	ND	2.04	102	2.00	3.02		
Total Xylenes*	<0.150	0.150	09/01/2022	ND	6.30	105	6.00	2.41		
Total BTX	<0.300	0.300	09/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	08/31/2022	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/01/2022	ND	211	106	200	2.06	
DRO >C10-C28*	<10.0	10.0	09/01/2022	ND	213	107	200	0.500	
EXT DRO >C28-C36	<10.0	10.0	09/01/2022	ND					

Surrogate: 1-Chlorooctane 87.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 87.9 % 46.3-178

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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: 08/30/2022  
Reported: 09/02/2022  
Project Name: MADDOX FED B #1 // NAPP2211065721  
Project Number: 03C2012001  
Project Location: BTA-EDDY CO. 32.34997,-103.44293

Sampling Date: 08/29/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW09 @ 0-4' (H223976-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/01/2022	ND	2.15	108	2.00	3.87		
Toluene*	<0.050	0.050	09/01/2022	ND	2.09	104	2.00	3.57		
Ethylbenzene*	<0.050	0.050	09/01/2022	ND	2.04	102	2.00	3.02		
Total Xylenes*	<0.150	0.150	09/01/2022	ND	6.30	105	6.00	2.41		
Total BTEx	<0.300	0.300	09/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/31/2022	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/01/2022	ND	211	106	200	2.06	
DRO >C10-C28*	<10.0	10.0	09/01/2022	ND	213	107	200	0.500	
EXT DRO >C28-C36	<10.0	10.0	09/01/2022	ND					

Surrogate: 1-Chlorooctane 86.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 86.5 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

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

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

---

Celey D. Keene, Lab Director/Quality Manager





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <b>Ensoium LLC</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>	
Project Manager: <b>Hadlie Green</b>		P.O. #:			
Address: <b>3122 National Parks Highway</b>		Company: <b>BTA Oil</b>			
City: <b>Carlsbad</b>		Attn: <b>Bob Hall</b>			
State: <b>NM</b> Zip: <b>88220</b>		Address: <b>104 S Pecos St</b>			
Phone #: <b>432-557-8895</b> Fax #:		City: <b>Midland</b>			
Project #: <b>03C2012001</b> Project Owner:		State: <b>TX</b> Zip: <b>79701</b>			
Project Name: <b>Maddox Fed B #1</b>		Phone #: <b>432-312-2203</b>			
Project Location: <b>32.34997, -103.44293</b>		Fax #:			
Sampler Name: <b>Meredith Roberts</b>					

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.		SAMPLING	DATE	TIME	BTEX	TPH	Chlorides
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL						
1603714	FS20A @ 5'	C 1	1	X									8/29/22 11:55	X	X	X	
2	SW07 @ 0-4'	C 1	1	X									8/29/22 12:10	X	X	X	
3	SW08 @ 0-4'	C 1	1	X									8/29/22 12:35	X	X	X	
4	SW09 @ 0-4'	C 1	1	X									8/29/22 12:40	X	X	X	

Relinquished By: <b>Meredith</b>		Date: <b>8/30/22</b>		Received By: <b>Spokane</b>		Date: <b>8/30/22</b>		Time: <b>1330</b>		Time: <b>1330</b>		Time: <b>1330</b>		Time: <b>1330</b>		Time: <b>1330</b>		Time: <b>1330</b>	
Relinquished By:		Date:		Received By:		Date:		Time:		Time:		Time:		Time:		Time:		Time:	
Delivered By: (Circle One)		Observed Temp. °C		Corrected Temp. °C		Sample Condition		CHECKED BY: (Initials)		Turnaround Time:		Standard		Bacteria (only)		Sample Condition		Observed Temp. °C	
Sampler - UPS - Bus - Other:		Corrected Temp. °C		Corrected Temp. °C		Cool Intact		Cool Intact		Thermometer ID #113		Rush		Cool Intact		Observed Temp. °C		Corrected Temp. °C	

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## APPENDIX D

### NMOCD Notifications

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OCD Permitting

Home   Operator Data   Action Status   Action Search Results   Action Status Item Details

[NOTIFY] Notification Of Release (NOR) Application

Submission Information

Submission ID:	100395	Districts:	Hobbs
Operator:	[260297] BTA OIL PRODUCERS, LLC	Counties:	Lea
Description:	BTA OIL PRODUCERS, LLC [260297] Maddox Fed B #1 Well Site nAPP2211065721 {Discovery: 04/20/2022, Active, , Federal}		
Status:	APPROVED		
Status Date:	04/20/2022		
References (2):	30-025-27941, nAPP2211065721		

Forms

This application type does not have attachments.

Questions

Location of Release Source

Please answer all of the questions in this group.

Site Name	Maddox Fed B #1 Well Site
Date Release Discovered	04/20/2022
Surface Owner	Federal

Incident Details

Please answer all of the questions in this group.

Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release

Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.

Crude Oil Released (bbls) Details	Cause: Blow Out   Well   Crude Oil   Released: 67 BBL   Recovered: 60 BBL   Lost: 7 BBL ]
Produced Water Released (bbls) Details	Not answered.
Is the concentration of dissolved chloride in the produced water >10,000 mg/l	Not answered.



Other, Specify, Unknown, and/or Fire, or any negative lost amounts)    around the BOP opening and into the cellar and onto the surrounding concrete pad and the caliche. After square recovery, impacted caliche was scraped and stockpiled for disposal.

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 19.15.29.7(A) NMAC    Yes, major release.

Reasons why this would be considered a submission for a notification of a major release    • Unauthorized release of a volume, excluding gases, of 25 barrels or more

If YES, was immediate notice given to the OCD, by whom    Bob Hall

If YES, was immediate notice given to the OCD, to whom    NMOCD via Permitting Website

If YES, was immediate notice given to the OCD, when    04/20/2022

If YES, was immediate notice given to the OCD, by what means (phone, email, etc.)    By filing the present NOR on Permitting Website

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 19.15.29.8 B. (4) 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 it has been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

Acknowledgments

- ☒ I acknowledge that I am authorized to submit notification of a releases on behalf of my operator.
- ☒ I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to my operator) to track the notification(s) and corrective action(s) for a release, pursuant to NMAC 19.15.29.
- ☒ I acknowledge that creating a new incident file will require my operator to file subsequent submission(s) of form "C-141, Application for administrative approval of a release notification and corrective action", pursuant to NMAC 19.15.29.
- ☒ 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.
- ☒ I acknowledge the fact that 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.
- ☒ I acknowledge the fact that, 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.

Comments

No comments found for this submission.

Conditions



No reasons found for this submission.

Fees

No fees found for this submission.

Go Back



**District I**

1625 N. French Dr., Hobbs, NM 88240  
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**District IV**

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

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

QUESTIONS

Action 100395

**QUESTIONS**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 100395
	Action Type: [NOTIFY] Notification Of Release (NOR)

**QUESTIONS**

<b>Location of Release Source</b>	
<i>Please answer all of the questions in this group.</i>	
Site Name	Maddox Fed B #1 Well Site
Date Release Discovered	04/20/2022
Surface Owner	Federal

<b>Incident Details</b>	
<i>Please answer all of the questions in this group.</i>	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	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

<b>Nature and Volume of Release</b>	
<i>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.</i>	
Crude Oil Released (bbls) Details	Cause: Blow Out   Well   Crude Oil   Released: 67 BBL   Recovered: 60 BBL   Lost: 7 BBL ]
Produced Water Released (bbls) Details	Not answered.
Is the concentration of dissolved chloride in the produced water >10,000 mg/l	Not answered.
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Cause: Blow Out   Well   Natural Gas Vented   Released: 5 Mcf   Recovered: 0 Mcf   Lost: 5 Mcf ]
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)	During P&A first circulation of well, the crew failed to close BOP correctly around the tubing. Fluid flowed out of the well from around the BOP opening and into the cellar and onto the surrounding concrete pad and the caliche. After squeegeeing oil for recovery, impacted caliche was scraped and stockpiled for disposal.



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QUESTIONS, Page 2

Action 100395

**QUESTIONS (continued)**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 100395
	Action Type: [NOTIFY] Notification Of Release (NOR)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by 19.15.29.7(A) NMAC	<b>Yes, major release.</b>
Reasons why this would be considered a submission for a notification of a major release	<ul style="list-style-type: none"> <li>Unauthorized release of a volume, excluding gases, of 25 barrels or more</li> </ul>
If YES, was immediate notice given to the OCD, by whom	Bob Hall
If YES, was immediate notice given to the OCD, to whom	NMOCD via Permitting Website
If YES, was immediate notice given to the OCD, when	04/20/2022
If YES, was immediate notice given to the OCD, by what means (phone, email, etc.)	By filing the present NOR on Permitting Website
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 19.15.29.8 B. (4) 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 19.15.29.11(A)(5)(a) NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.



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ACKNOWLEDGMENTS

Action 100395

**ACKNOWLEDGMENTS**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 100395
	Action Type: [NOTIFY] Notification Of Release (NOR)

**ACKNOWLEDGMENTS**

<input checked="" type="checkbox"/>	I acknowledge that I am authorized to submit notification of a releases on behalf of my operator.
<input checked="" type="checkbox"/>	I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to my operator) to track the notification(s) and corrective action(s) for a release, pursuant to NMAC 19.15.29.
<input checked="" type="checkbox"/>	I acknowledge that creating a new incident file will require my operator to file subsequent submission(s) of form "C-141, Application for administrative approval of a release notification and corrective action", pursuant to NMAC 19.15.29.
<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	I acknowledge the fact that 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.
<input checked="" type="checkbox"/>	I acknowledge the fact that, 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.



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Energy, Minerals and Natural Resources  
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Santa Fe, NM 87505

CONDITIONS

Action 100395

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 100395
	Action Type: [NOTIFY] Notification Of Release (NOR)

CONDITIONS

Created By	Condition	Condition Date
bob hall	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.	4/20/2022



**From:** [Tacoma Morrissey](#)  
**To:** [ocd.enviro@state.nm.us](mailto:ocd.enviro@state.nm.us)  
**Cc:** [Bob Hall](#); [Hadlie Green](#)  
**Subject:** BTA - Sampling Notification- Maddox Fed B #1 Well Site / NAPP2211065721  
**Date:** Thursday, July 28, 2022 1:55:00 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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All,

On behalf of BTA Oil Producers, we respectfully submit notification of sampling to be conducted at the subject site. Sampling will occur between August 1, 2022 and August 3, 2022.

- Maddox Fed B #1 Well Site / NAPP2211065721

Thank you,



**Tacoma Morrissey**

Senior Geologist

337-257-8307

**Ensolum, LLC**

in f 



**From:** [Nobui, Jennifer, EMNRD](#)  
**To:** [Hadlie Green](#)  
**Cc:** [Bratcher, Mike, EMNRD](#); [Hamlet, Robert, EMNRD](#); [Harimon, Jocelyn, EMNRD](#)  
**Subject:** FW: [EXTERNAL] BTA - Sampling Notification - Week of August 29th - September 2nd  
**Date:** Monday, August 29, 2022 10:33:28 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

---

[ \*\*EXTERNAL EMAIL\*\* ]

Hadlie

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

Thanks,  
Jennifer Nobui

---

**From:** Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>  
**Sent:** Monday, August 29, 2022 8:06 AM  
**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Velez, Nelson, EMNRD <Nelson.Velez@state.nm.us>  
**Subject:** Fw: [EXTERNAL] BTA - Sampling Notification - Week of August 29th - September 2nd

---

**From:** Hadlie Green <[hgreen@ensolum.com](mailto:hgreen@ensolum.com)>  
**Sent:** Friday, August 26, 2022 1:34 PM  
**To:** Enviro, OCD, EMNRD <[OCD.Enviro@state.nm.us](mailto:OCD.Enviro@state.nm.us)>  
**Cc:** Tacoma Morrissey <[tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com)>; [bhall@btaoil.com](mailto:bhall@btaoil.com) <[bhall@btaoil.com](mailto:bhall@btaoil.com)>  
**Subject:** [EXTERNAL] BTA - Sampling Notification - Week of August 29th - September 2nd

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 August 29, 2022.

- Maddox Fed B #1 Well Site / Incident Number NAPP2211065721
  - GPS: 32.34997, -103.44293
- Rojo B Poly Line Rupture / Incident Number nAPP2216138632
  - GPS: 32.12237, -103.56097



Thank you,



**Hadlie Green**

Staff Geologist

432-557-8895

[hgreen@ensolum.com](mailto:hgreen@ensolum.com)

Ensolum, LLC

in f 



**From:** [Nobui, Jennifer, EMNRD](#)  
**To:** [Tacoma Morrissey](#)  
**Cc:** [Bratcher, Mike, EMNRD](#); [Hamlet, Robert, EMNRD](#); [Harimon, Jocelyn, EMNRD](#)  
**Subject:** FW: [EXTERNAL] BTA-Extension Request - Maddox Fed B #1 Well Site (Incident Number NAPP2211065721)  
**Date:** Monday, July 18, 2022 3:47:30 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

---

[ \*\*EXTERNAL EMAIL\*\* ]

Tacoma

Your request for an extension to **October 17th, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

Thanks  
Jennifer Nobui

---

**From:** Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>  
**Sent:** Monday, July 18, 2022 2:43 PM  
**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Velez, Nelson, EMNRD <Nelson.Velez@state.nm.us>  
**Subject:** Fw: [EXTERNAL] BTA-Extension Request - Maddox Fed B #1 Well Site (Incident Number NAPP2211065721)

---

**From:** Tacoma Morrissey <[tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com)>  
**Sent:** Monday, July 18, 2022 1:32 PM  
**To:** Enviro, OCD, EMNRD <[OCD.Enviro@state.nm.us](mailto:OCD.Enviro@state.nm.us)>  
**Cc:** Bob Hall <[BBHall@btaoil.com](mailto:BBHall@btaoil.com)>; Hadlie Green <[hgreen@ensolum.com](mailto:hgreen@ensolum.com)>  
**Subject:** [EXTERNAL] BTA-Extension Request - Maddox Fed B #1 Well Site (Incident Number NAPP2211065721)

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

All,

BTA is requesting an extension for the current deadline of July 19, 2022 for submitting a remediation work plan or closure request required in 19.15.29.12.B.(1) NMAC at the Maddox Fed B #1 Well Site (Incident Number NAPP2211065721). The release occurred on April 20, 2022. Initial assessment of the release has been completed and operations at the facility delayed remediation activities.



Operations have been completed and remediation is ongoing. In order to complete the remediation activities and submit a remediation work plan or closure request, BTA is requesting a 90-day extension until October 17, 2022.

Thank you,



**Tacoma Morrissey**

Senior Geologist

337-257-8307

**Ensolum, LLC**

in f 





## APPENDIX E

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	nAPP2211065721
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) nAPP2211065721
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

### Location of Release Source

Latitude: 32.05980 Longitude: -103.60435

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Maddox Federal B #1	Site Type: Well Site
Date Release Discovered: 4/20/2022	API# (if applicable) Nearest well: 30-025-27941

Unit Letter	Section	Township	Range	County
F	35	22S	34E	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 checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 67 BBL	Volume Recovered (bbls) 60 BBL
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Natural Gas	Volume Released (Mcf) 5 MCF	Volume Recovered (Mcf) 0 MCF
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

During P&A first circulation of well, the crew failed to close BOP correctly around the tubing. Fluid flowed out of the well from around the BOP opening and into the cellar and onto the surrounding concrete pad and the caliche. After squeegeeing oil for recovery, impacted caliche was scraped and stockpiled for disposal.



State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2211065721
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  Yes – Release greater than 25 BBL.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by filing a Notice of Release (NOR) on the NMOCD Permitting website on 4/20/2022. The Incident ID listed above was assigned after the NOR was acknowledged by the NMOCD.	

**Initial Response**

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:          	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <b>Bob Hall</b> Title: <b>Environmental Manager</b>	
Signature: _____/s/ Bob Hall_____ Date: <b>5/5/2022</b>	
email: <b>bhall@btaoil.com</b> Telephone: <b>432-682-3753</b>	
<b><u>OCD Only</u></b>	
Received by: <u>Jocelyn Harimon</u> Date: <u>05/06/2022</u>	



**Location** Maddox Federal B #1 **Area on Caliche Pad**  
**API #** 30-025-27941  
**Spill Date** 4/20/2022

**Spill Dimensions**

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

**Oil Cut - Well Test / Vessel Throughput or Contents**

Oil   
 Water   
 Calculated Oil Cut

**Volume Recovered in Truck / Containment**

**ENTER** - Recovered Oil  BBL  
**ENTER** - Recovered Water  BBL

**Calculated Values**

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

**Calculated Values**

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

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

(Length X Width X Depth X 1 ft/12 in) X Porosity  
 5.615 ft<sup>3</sup> / BBL

X

Oil Cut  
(or Water Cut)



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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

CONDITIONS  
  
Action 104768

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 104768
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	5/6/2022



Incident ID	nAPP2211065721
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>&gt;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 <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

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



State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2211065721
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: Bob Hall Title: Environmental Manager

Signature:  Date: 09/19/2022

email: bhall@btaoil.com Telephone: 432-682-3753

**OCD Only**

Received by: Jocelyn Harimon Date: 09-20-2022



Incident ID	nAPP2211065721
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 OCD District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Bob Hall Title: Environmental Manager  
Signature:  Date: 09/19/2022  
email: bhall@btaoil.com Telephone: 432-682-3753

**OCD Only**

Received by: Jocelyn Harimon Date: 09-20-2022

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: 09/22/2022  
Printed Name: Jennifer Nobui Title: Environmental Specialist A



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

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

CONDITIONS

Action 144926

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 144926
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved.	9/22/2022