



July 25, 2024

**New Mexico Oil Conservation Division**

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

**Re: Closure Request  
Big Eddy Unit 34 Hackberry  
Incident Number NAPP2412351243  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request* to document site assessment, excavation, and soil sampling activities at the Big Eddy Unit 34 Hackberry (Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of crude oil. Based on field observations and soil sample laboratory analytical results, XTO is submitting this *Closure Request*, describing site assessment, delineation, and excavation activities that have occurred and requesting no further remediation for Incident Number NAPP2412351243.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit A, Section 34, Township 19 South, Range 31 East, in Eddy County, New Mexico (32.62201°, 103.85107°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

On April 26, 2024, a heater treater gasket failed causing the release of approximately 12 barrels (bbls) of crude oil onto the surface of the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; 10 bbls of released fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on May 2, 2024. The release was assigned Incident Number NAPP2412351243.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized to determine the applicability of Table I Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented below. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on a soil boring drilled for determination of regional groundwater depth. On April 26, 2021, a soil boring permitted by New Mexico Office of the State Engineer (OSE) as CP-1864 was advanced approximately 0.42 miles west of the Site. The boring was drilled to a total depth of 110 feet bgs. A field geologist logged and

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described soils continuously. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 110 feet bgs. The borehole was properly abandoned using hydrated bentonite chips. The Well Record and Log for CP-1864 is included in Appendix A. All wells used to evaluate depth to groundwater are presented on Figure 1.

The closest continuously flowing or significant watercourse to the Site is a dry wash located approximately 13,288 feet north 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).

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

## SITE ASSESSMENT ACTIVITIES

On May 20, 2024, Site assessment activities were conducted by Ensolum to evaluate the release extent based on information provided on the Form-C141 and visual observations. Six delineation soil samples (SS01 through SS06) were collected inside the release extent. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was collected during the Site assessment and a Photographic Log is included in Appendix B.

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

Laboratory analytical results for delineation soil samples SS01 through SS06 indicated that TPH-GRO/TPH-DRO and total TPH concentrations exceeded the Closure Criteria. Laboratory analytical results for soil samples SS01 and SS06 exhibited BTEX concentrations exceeding the Closure Criteria. All remaining COCs for soil samples SS01 through SS06 indicated concentrations below Closure Criteria. Based on visible staining in the release area and laboratory analytical results, additional delineation and excavation activities were warranted.

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## DELINEATION AND EXCAVATION SOIL SAMPLING ACTIVITIES

Between May 30 and July 23, 2024, Ensolum personnel were at the Site to oversee delineation and excavation activities. Three potholes (PH01 through PH03) were advanced utilizing heavy equipment and three boreholes (BH01 through BH03) were advanced utilizing a hand auger within and around the release extent area to assess the vertical extent of the release. Delineation soil samples were collected in each pothole and borehole at depths ranging from 0.5 feet bgs to 4 feet bgs. The delineation soil samples were field screened for VOCs and chloride as described above. The delineation soil samples were collected and handled as described above and were transported under strict chain-of-custody procedures to Cardinal for analysis of the same COCs listed above. Field screening results and observations for all potholes and boreholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil sample locations are depicted on Figure 2.

Impacted soil was excavated from the release area as indicated by delineation soil sample laboratory analytical results. Excavation activities were performed utilizing a backhoe, trackhoe, hydrovacuum truck, and transport vehicles. The excavation occurred on the well pad near active production equipment and pipelines. Due to the active production equipment and a guide wire cable located within the release extent area, running from the top of the heater treater to the ground surface, the excavation was divided into two separate extents, which made portions of the release extent inaccessible by heavy equipment. To direct excavation activities, Ensolum personnel screened soil for VOCs and chlorides. Following removal of impacted soil, Ensolum personnel collected 5-point composite soil samples representing no more than 200 square feet from the sidewalls and floor of the excavation. The 5-point composite soil samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Confirmation soil samples FS01 through FS17 were collected from the floor of the excavation at a depth of 4 feet bgs. Confirmation soil samples SW01 through SW08 were collected from the sidewalls of the excavation at depths ranging from ground surface to 4 feet bgs. The soil samples were collected, handled, and analyzed following the same procedures as described above and submitted to Cardinal. The excavation extent and confirmation soil sample locations are presented on Figure 3.

In order to define the western extent of the release to reclamation requirement standards, two additional delineation soil samples (SS07 and SS08) were collected on July 23, 2024. Soil samples SS07 and SS08 were collected outside the release extent, beyond borehole BH01 and BH02 locations, at a depth of 0.5 feet bgs.

The final excavation extent, between both excavated areas, measured approximately 3,000 square feet. A total of approximately 460 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Landfill Disposal Facility in Hobbs, New Mexico. After completion of confirmation sampling, the excavation area was secured with fencing.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for all confirmation soil samples collected indicated all COC concentrations were compliant with the Closure Criteria. Additionally, results from analysis of confirmation sidewall soil samples SW01, SW02, SW04 through SW06, and SW08 indicated all COC concentrations were compliant with the reclamation requirement and confirms the southern, eastern, and northern extent of the release.

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Laboratory analytical results for delineation soil samples SS01 through SS06 and PH01 through PH03 collected at 0.5 feet bgs indicated COC concentrations exceeding Closure Criteria; however, soil represented by these soil samples was removed during excavation activities. Laboratory analytical results for delineation soil samples SS07 and SS08 indicated COC concentrations below Closure Criteria and reclamation requirement standards, and thus define the western extent of the release area. Laboratory analytical results from terminal depths of potholes PH01 through PH03 and borehole BH03 are compliant with the strictest Table I Closure Criteria and provide vertical definition of the release. Laboratory analytical results for samples collected from boreholes BH01, BH02, and BH03 indicated the presence of elevated TPH (ranging from 166 mg/kg to 797 mg/kg). Additionally, the sample collected from 0.5 feet bgs in BH03 contained elevated chloride concentrations (1,170 mg/kg). The areas represented by those soil samples was inaccessible to heavy equipment, and waste-containing soil remains in place there. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

## CLOSURE REQUEST

Site assessment, delineation, and excavation activities were conducted at the Site to address the April 2024, release of crude oil. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the Site Closure Criteria. Based on the soil sample analytical results, no further remediation was required. Based on laboratory analytical results from boreholes BH01 through BH03, waste-containing soil remains under active production equipment and pipelines. An estimated 438 cubic yards of waste-containing soil is present in an area covering approximately 3,950 square-feet. The waste-containing soil will be removed at the time of final reclamation of the well pad or major facility deconstruction, whichever comes first. XTO has scheduled backfill of the excavation with material purchased locally for the week of July 29, 2024, and the area will be recontoured to match pre-existing site conditions.

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 Site. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2412351243.

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**

Handwritten signature of Benjamin J. Belill in black ink.

Benjamin J. Belill  
Senior Geologist

Handwritten signature of Ashley L. Ager in black ink.

Ashley Ager MS, PG.  
Principal

cc: Amy Ruth, XTO  
Amanda Garcia, XTO  
BLM

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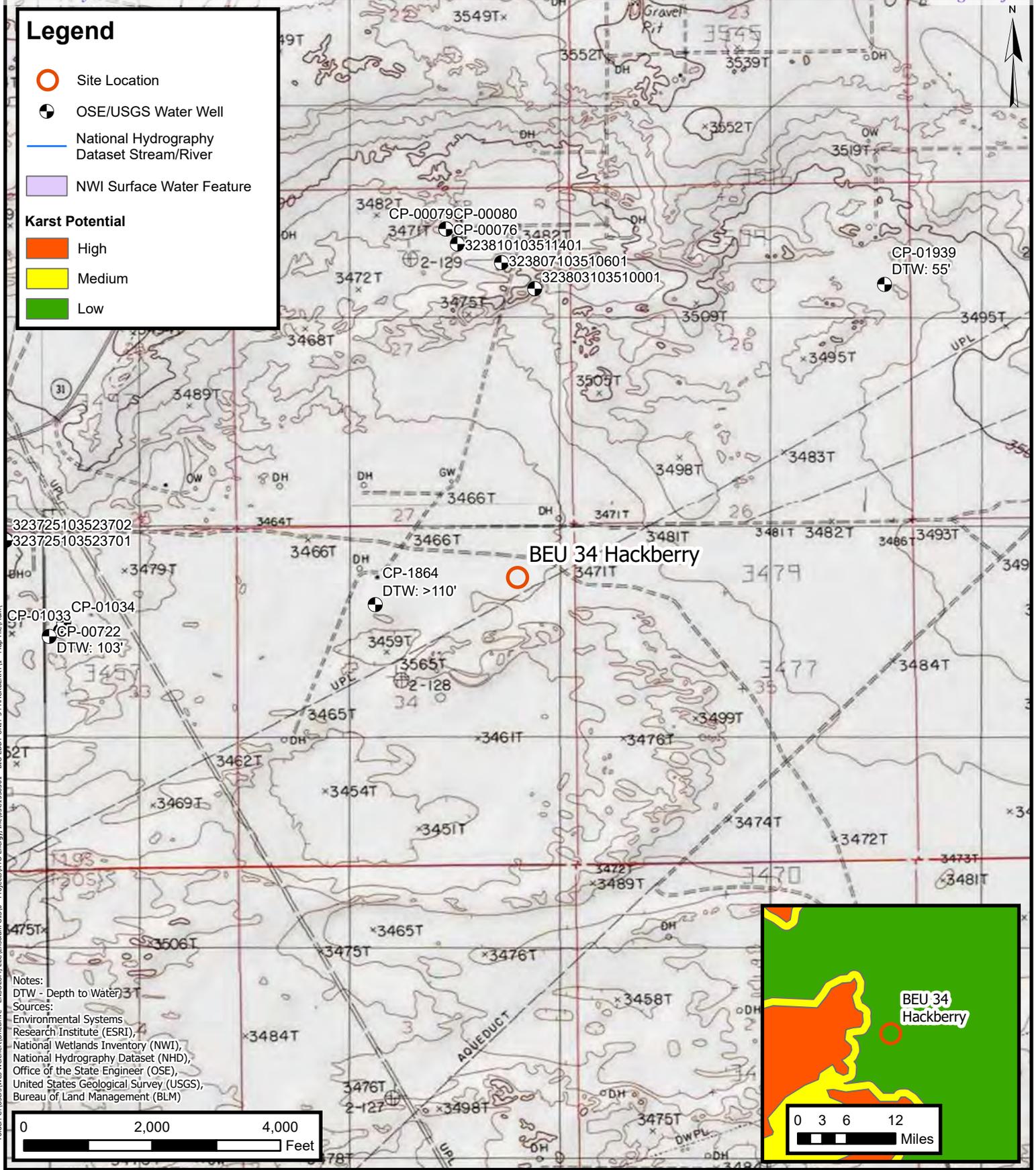
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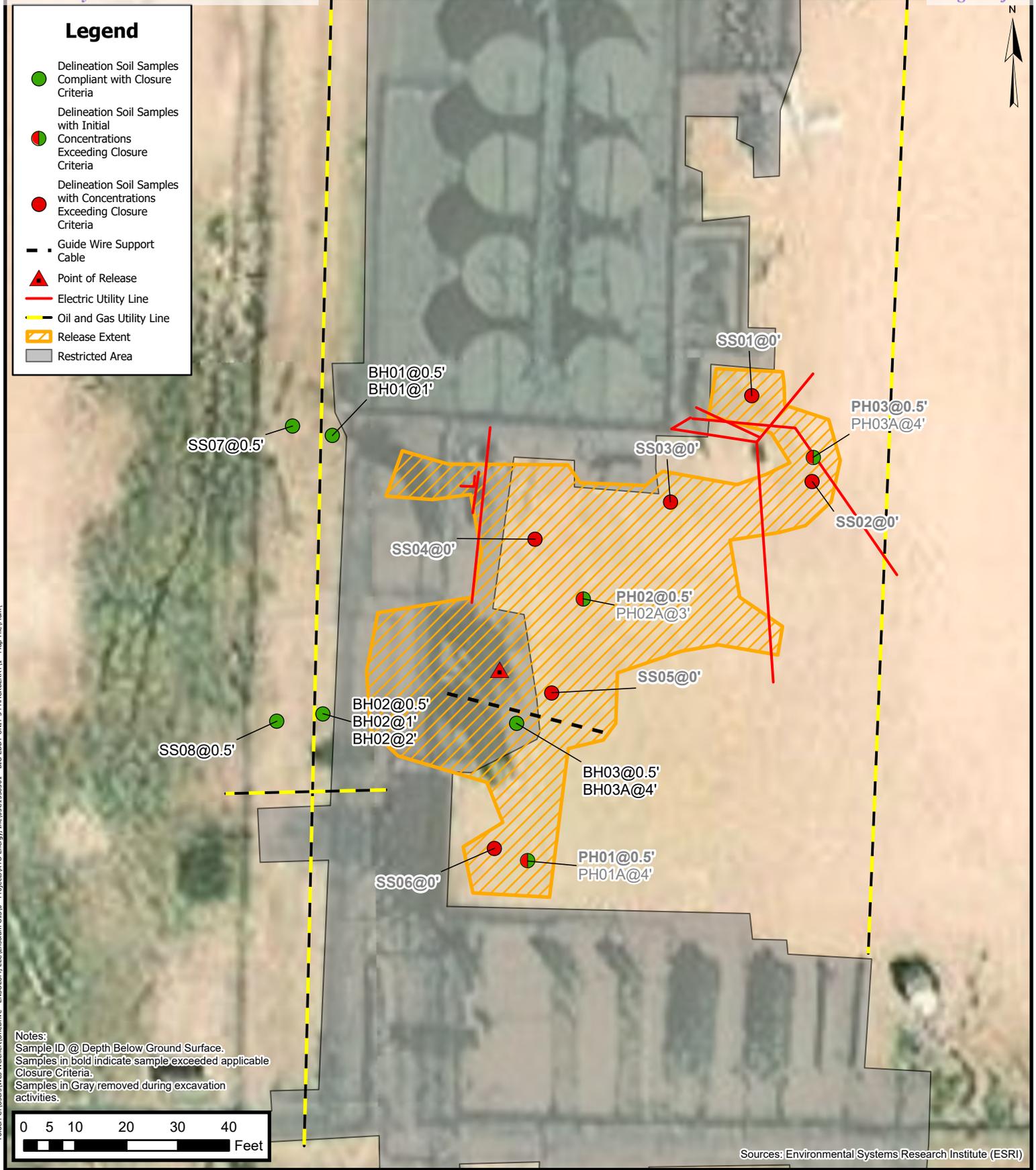
Appendices:

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



FIGURES





Folder: C:\Users\Wes.Weichert\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\XTO Energy, Inc\03C1159361 - BIG EDDY UNIT 34 HACKBERRY1 - Map File(Main)

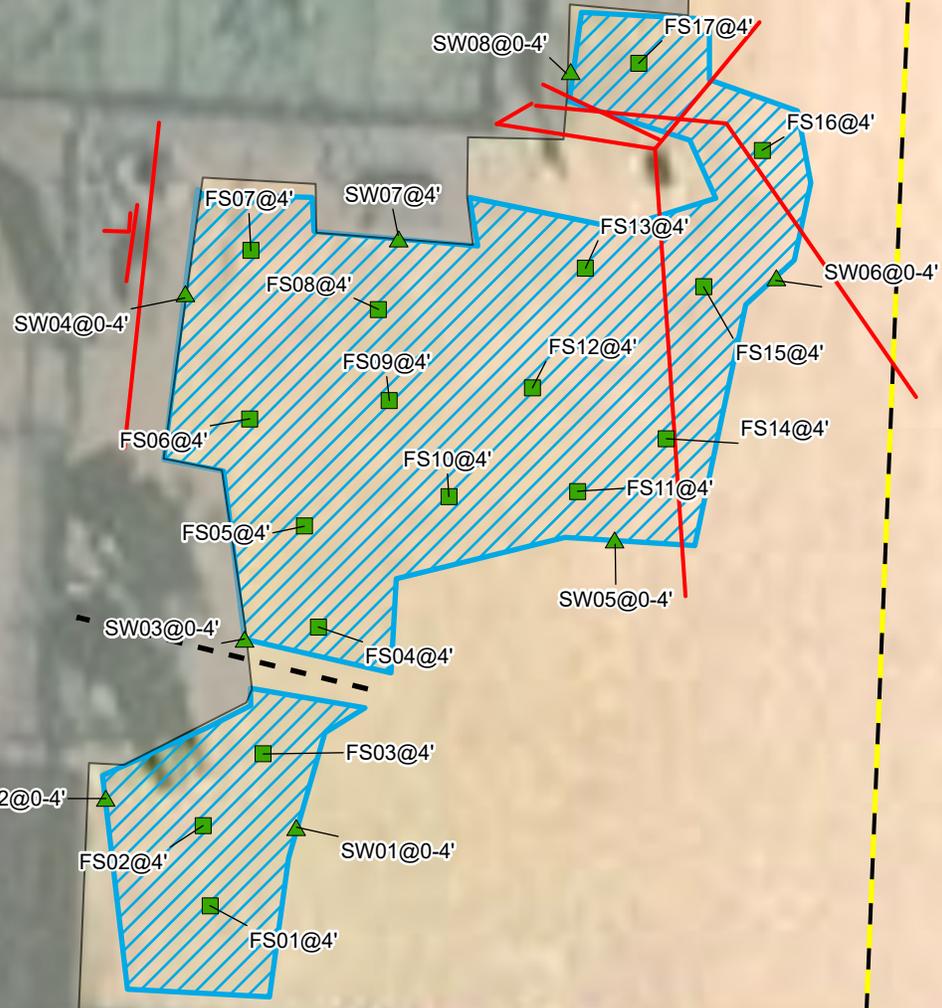


**Delineation Soil Sample Locations**  
 XTO Energy, Inc  
 Big Eddy Unit 34 Hackberry  
 Incident Number: NAPP2412351243  
 Unit A, Sec 34, T19S, R31E  
 Eddy County, New Mexico

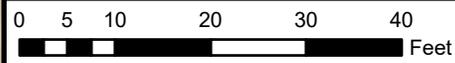
**FIGURE 2**

### Legend

- Excavation Floor Soil Samples Compliant with Closure Criteria
- ▲ Excavation Sidewall Soil Samples Compliant with Closure Criteria
- Excavation Extent
- Restricted Area
- Electric Utility Line
- Oil and Gas Utility Line
- Guide Wire Support Cable



Notes:  
Sample ID @ Depth Below Ground Surface.



Sources: Environmental Systems Research Institute (ESRI)

## Excavation Soil Sample Locations

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 Unit A, Sec 34, T19S, R31E  
 Eddy County, New Mexico

**FIGURE**  
**3**





TABLES

**TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
Big Eddy Unit 34 Hackberry  
XTO Energy, Inc  
Eddy 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)
<b>NMOCDC Table I Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
<b>Delineation Soil Samples</b>										
SS01	05/20/2024	0	0.805	71.2	1,620	45,900	5,490	47,520	53,010	128
SS02	05/20/2024	0	0.3	28.8	459	34,200	4,840	34,659	39,499	784
SS03	05/20/2024	0	<0.250	6.81	227	39,200	5,230	39,427	44,657	19,400
SS04	05/20/2024	0	<0.250	17.4	475	34,500	4,530	34,975	39,505	17,600
SS05	05/20/2024	0	<0.250	9.72	304	35,800	4,190	36,104	40,294	11,400
SS06	05/20/2024	0	6.33	89.1	1,610	41,500	4,710	43,110	47,820	992
SS07	07/23/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
SS08	07/23/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	176
PH01	05/30/2024	0.5	<0.100	41.6	705	4,520	694	5,225	5,919	176
PH01A	05/30/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80
PH02	05/30/2024	0.5	1.97	174	2,240	6,460	874	8,700	9,574	832
PH02A	05/30/2024	3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	448
PH03	05/30/2024	0.5	<0.050	4.75	103	1,710	312	1,813	2,125	320
PH03A	05/30/2024	4	<0.050	<0.300	<10.0	37.2	<10.0	37.2	37.2	480
BH01	06/27/2024	0.5	<0.050	<0.300	<10.0	111	55.3	111	166	368
BH01	06/27/2024	1	<0.050	<0.300	<10.0	359	231	359	590	288
BH02	06/27/2024	0.5	<0.050	<0.300	<10.0	481	316	481	797	368
BH02	06/27/2024	1	<0.050	<0.300	<10.0	291	198	291	489	256
BH02	06/27/2024	2	<0.050	<0.300	<10.0	264	163	264	427	272
BH03	07/12/2024	0.5	<0.050	<0.300	<10.0	379	228	379	607	1,170
BH03A	07/12/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	384
<b>Confirmation Soil Samples</b>										
FS01	06/03/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
FS02	06/03/2024	4	<0.050	<0.300	<10.0	39.9	<10.0	39.9	39.9	256
FS03	06/03/2024	4	<0.050	<0.300	<10.0	28.4	<10.0	28.4	28.4	432
FS04	06/03/2024	4	<0.050	<0.300	<10.0	122	35.4	122	157	2,480
FS05	06/03/2024	4	<0.050	<0.300	<10.0	12.9	<10.0	12.9	12.9	1,120
FS06	06/03/2024	4	<0.050	<0.300	<10.0	38.4	15.1	38.4	53.5	624
FS07	06/03/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	576
FS08	06/03/2024	4	<0.050	<0.300	<10.0	13.5	<10.0	13.5	13.5	144
FS09	06/04/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	560

**TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
Big Eddy Unit 34 Hackberry  
XTO Energy, Inc  
Eddy 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)
<b>NMOCDC Table I Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
FS10	06/04/2024	4	<0.050	<0.300	<10.0	19.1	<10.0	19.1	19.1	432
FS11	06/04/2024	4	<0.050	<0.300	<10.0	47.3	<10.0	47.3	47.3	592
FS12	06/04/2024	4	<0.050	<0.300	<10.0	38	<10.0	38	38	288
FS13	06/04/2024	4	<0.050	<0.300	<10.0	14.1	<10.0	14.1	14.1	736
FS14	06/04/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
FS15	06/04/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
FS16	06/04/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
FS17	07/12/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	352
SW01	06/03/2024	0-4	<0.050	<0.300	<10.0	62.2	15.2	62.2	77.4	224
SW02	06/03/2024	0-4	<0.050	<0.300	<10.0	362	135	362	497	496
SW03	06/03/2024	0-4	<0.050	<0.300	<10.0	18.8	<10.0	18.8	18.8	688
SW04	06/03/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	336
SW05	06/04/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	224
SW06	06/04/2024	0-4	<0.050	<0.300	<10.0	16.7	<10.0	16.7	16.7	560
SW07	06/04/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	928
SW08	07/12/2024	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160

Notes:

bgs: below ground surface  
mg/kg: milligrams per kilogram  
NMOCDC: New Mexico Oil Conservation Division  
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes  
Concentrations in **bold** exceed the NMOCDC Table I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics  
DRO: Diesel Range Organics  
ORO: Oil Range Organics  
TPH: Total Petroleum Hydrocarbon  
NMAC: New Mexico Administrative Code  
Grey text indicates soil sample removed during excavation activities



## 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.) POD1 (BH-01)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-1864 CP 1864			
	WELL OWNER NAME(S) XTO Energy (Kyle Littrell)				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE TX	ZIP 79707	
	WELL LOCATION (FROM GPS)	LATITUDE	DEGREES 32°	MINUTES 37'	SECONDS 14.58" N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84		
		LONGITUDE	-103°	51'	31.48" W			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE SW SE Sec. 15 T24S R31E								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.		
	DRILLING STARTED 02/26/2021	DRILLING ENDED 02/26/2021	DEPTH OF COMPLETED WELL (FT) temporary well material	BORE HOLE DEPTH (FT) 110	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 type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	110	±6.5	Boring- HSA	--	--	--	--
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						

USE DITNR 11/2021 PMG/YY

FOR OSE INTERNAL USE				WR-20 WELL RECORD & LOG (Version 06/30/17)			
FILE NO.	CP-1864	POD NO.	1	TRN NO.	686596		
LOCATION	214 T19S R31E Sec 34	WELL TAG ID NO.	NA	PAGE 1 OF 2			

4. HYDROGEOLOGIC LOG OF WELL	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
	FROM	TO				
	0	1.5	1.5	Caliche w/ sand, no odor, no stain, tan, off white, dry	Y ✓ N	
	1.5	13	11.5	Sand, no odor, no stain, m-f, well sorted, gray, trace silt, some caliche, dry	Y ✓ N	
	13	24	11	Sandstone, m-f, low consolidation, gray, little coarse gravel, dry	Y ✓ N	
	24	34	10	Sand w/ caliche, gray, tan, moist, m-f, well sorted	Y ✓ N	
	34	41	7	Caliche /Sand, m-f, well sorted, tan, offwhite, mod. consolidation, moist	Y ✓ N	
	41	50	9	Clayey sand, gray, fine grain, well sorted, med. plasticity, cohesive, moist, w/ cal	Y ✓ N	
	50	69	19	Caliche w/ sandy clay, m-f, no cohesion, no plasticity, dry	Y ✓ N	
	69	79	10	Sandstone, tan, m-f, , high consolidation, dry	Y ✓ N	
	79	92	13	Clayey sand,medium plasticity, cohesive, fine grained sand, brown, moist	Y ✓ N	
	92	110	18	Claystone, brown, high plasticity, cohesive, no odor, no stain, moist	Y ✓ N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:					TOTAL ESTIMATED WELL YIELD (gpm): 0.00	
<input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY:						

5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.
	MISCELLANEOUS INFORMATION:	Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface. Logs adapted from WSP on-site geologist.
	PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:	Shane Eldridge <span style="float:right;">OSE DJJ MAR 11 2021 PM4:27</span>

6. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:	
	 Jackie D. Atkins	03/09/2021
	SIGNATURE OF DRILLER / PRINT SIGNEE NAME	DATE

FOR OSE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 06/30/2017)	
FILE NO. CP-1864	POD NO. 1	TRN NO. 686596	
LOCATION 214 T19S R31E Sec 34	WELL TAG ID NO. NA	PAGE 2 OF 2	

John R. D Antonio, Jr., P.E.  
State Engineer



Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

**STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 686596  
File Nbr: CP 01864  
Well File Nbr: CP 01864 POD1

Apr. 07, 2021

KYLE ITTRELL  
XTO ENERGY INC  
6401 HOLIDAY HILL ROAD  
MIDLAND, TX 79707

Greetings:

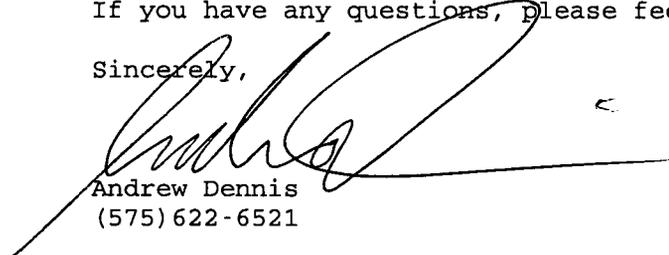
The above numbered permit was issued in your name on 01/29/2021.

The Well Record was received in this office on 03/11/2021, stating that it had been completed on 02/26/2021, and was a dry well. The well is to be plugged according to 19.27.4.30 NMAC.

Please note that another well can be drilled under this permit if the well is completed and the well log filed on or before 01/28/2022.

If you have any questions, please feel free to contact us.

Sincerely,

  
Andrew Dennis  
(575) 622-6521

drywell



## APPENDIX B

### Photographic Log

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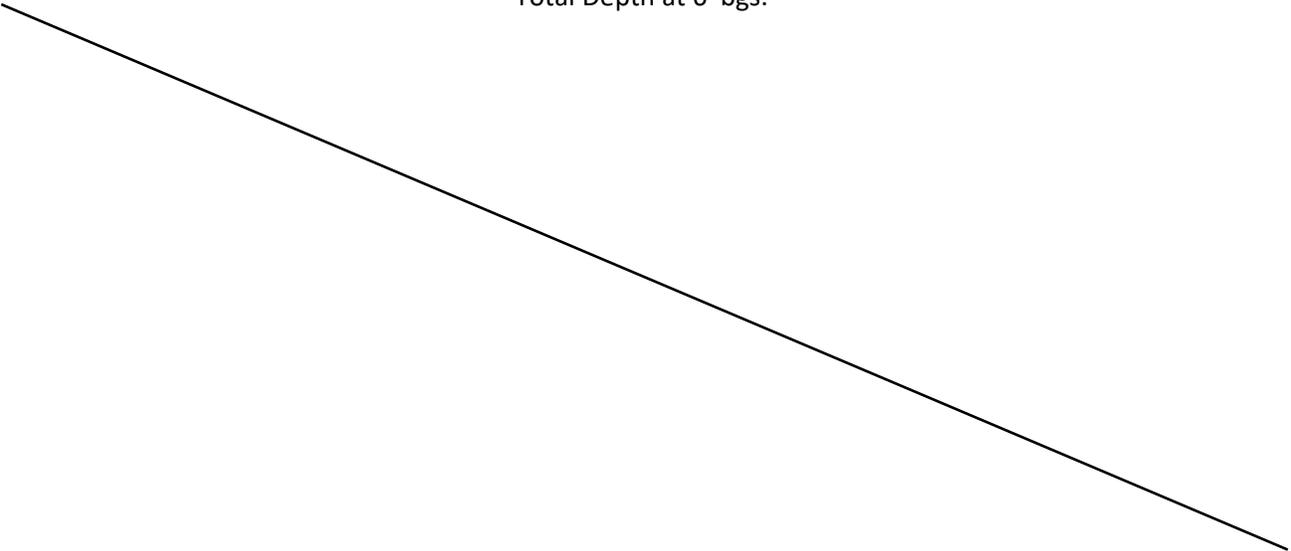


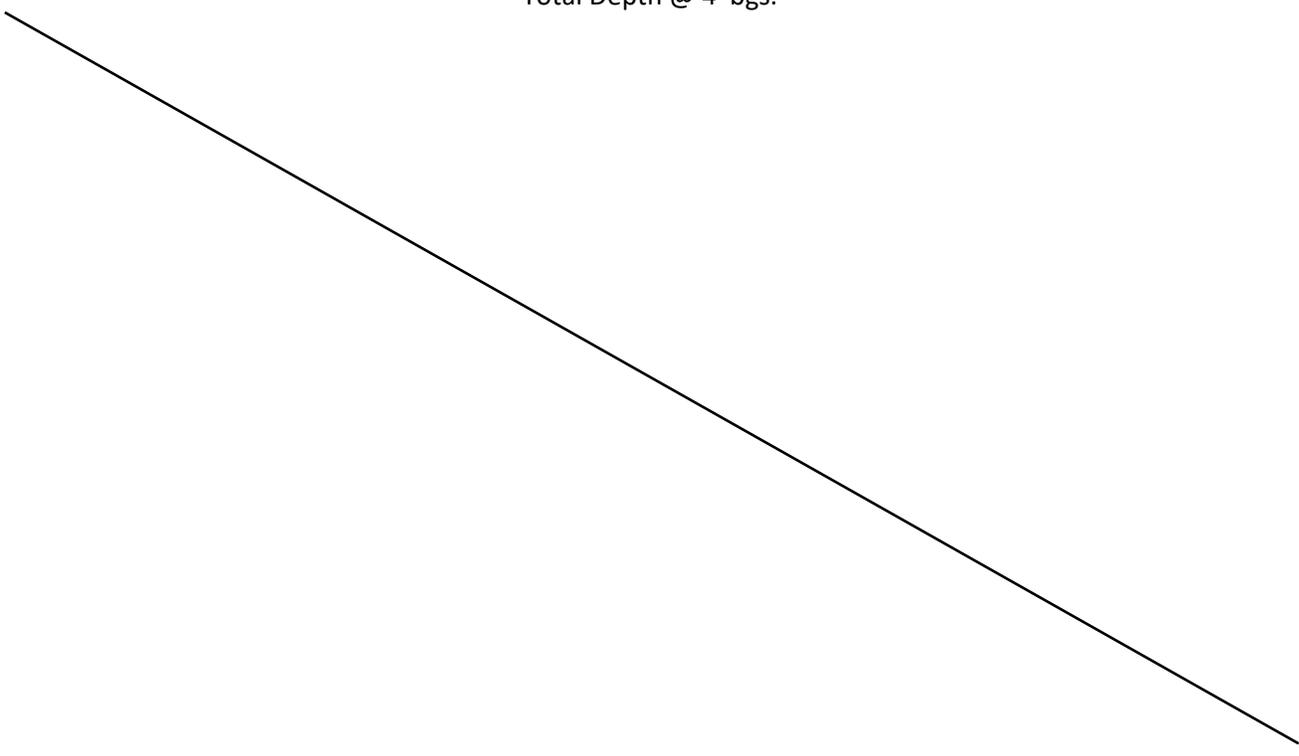
## APPENDIX C

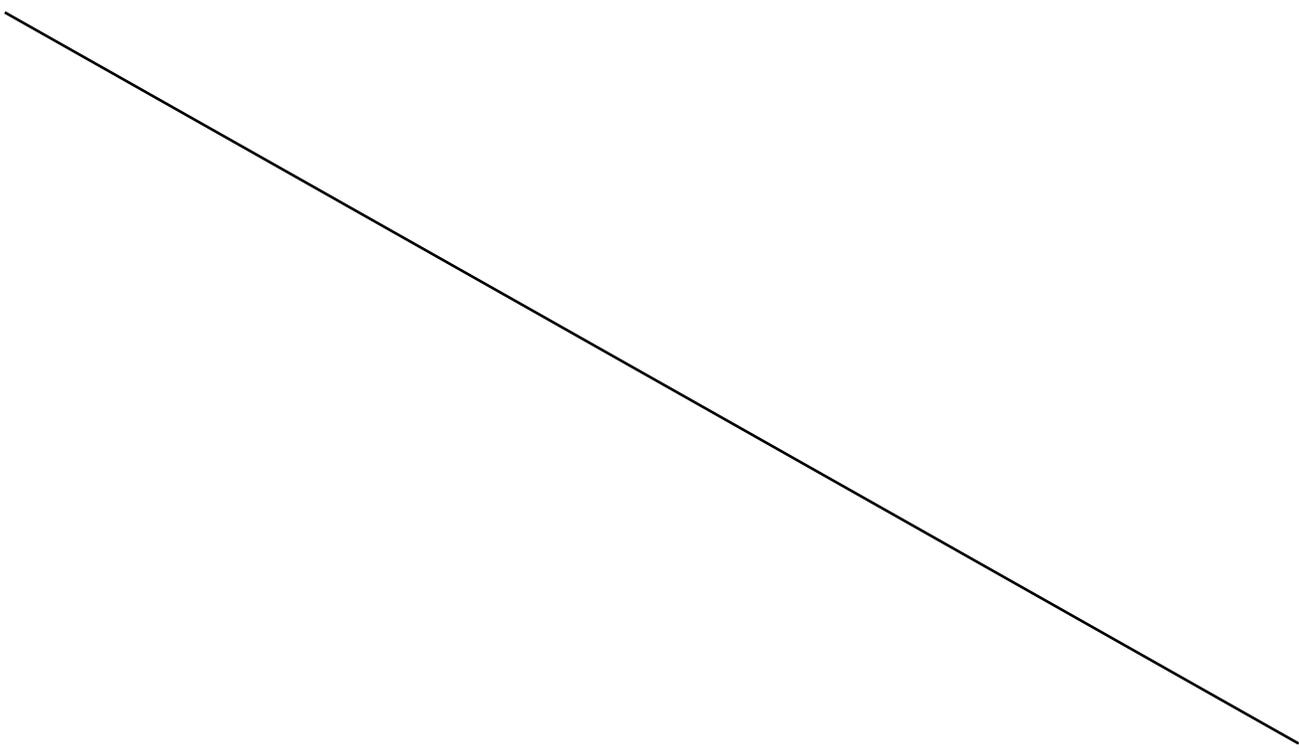
### Lithologic Soil Sampling Logs

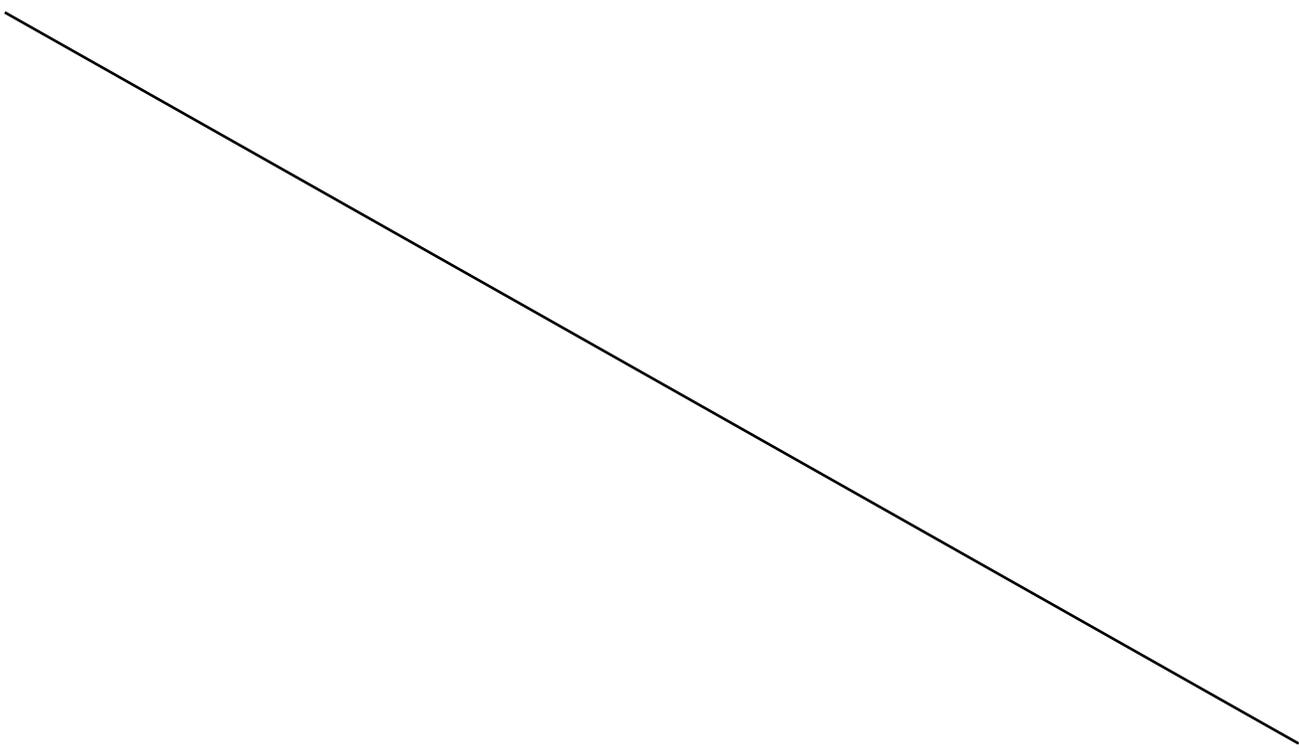
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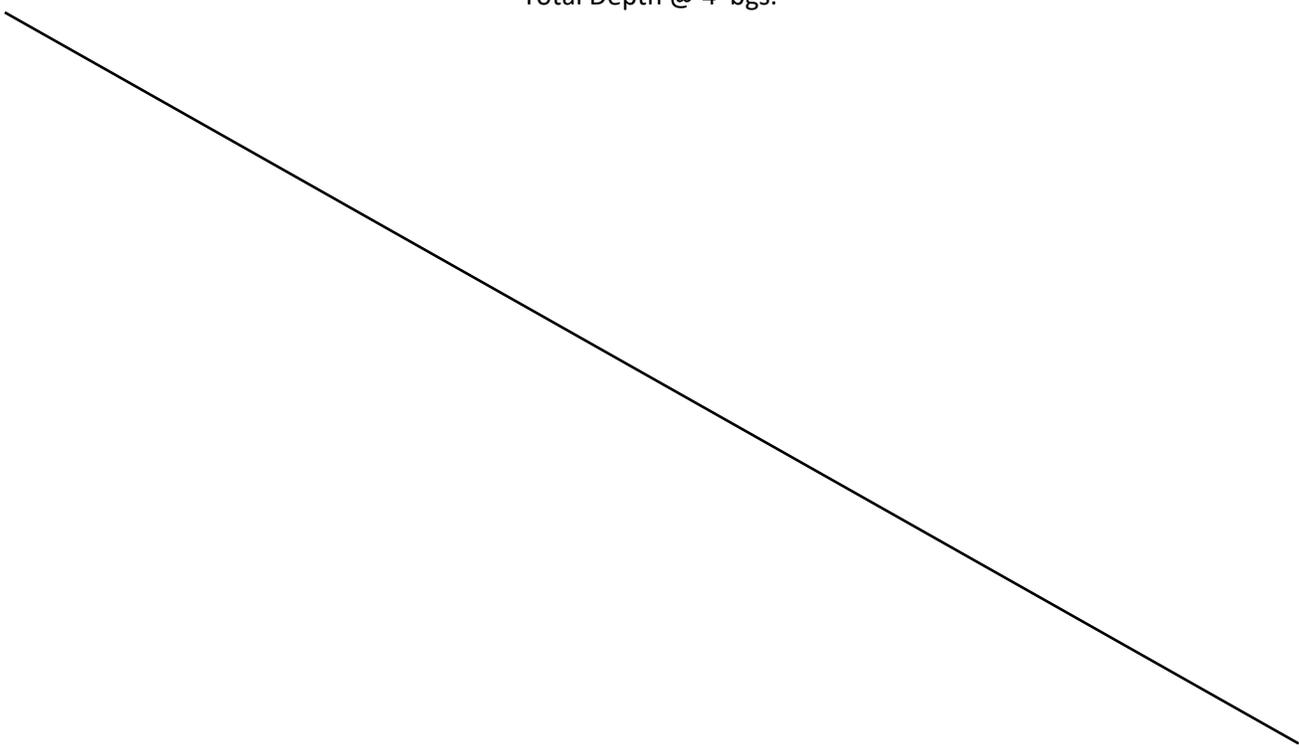
							Sample Name: PH01		Date: 5/30/2024	
							Site Name: Big Eddy Unit 34 Hackberry			
							Incident Number: nAPP2412351243			
							Job Number: 03C1558361			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: M. O'Dell		Method: Backhoe	
Coordinates: 32.621758, -103.851603							Hole Diameter: ~3		Total Depth: 5'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride measurements are calculated with a +40% correction factor.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
D	274.4	584	Y	PH01	0.5	0	CCHE/ SW	Caliche/Sand. Tan - brown, very fine to fine grained, well graded, dry, stained, strong odor.		
D	274	92.5	Y		1	1				
D	235	89.5	Y		2	2				
D	<162	2.6	N		3	3	SW	Sand. Tan - brown, very fine to fine grained, well graded, strong odor, staining.		
M	<162	0.0	N	PH01A	4	4				
M	<162	0.0	N		5	5	SP	Sand. Tan, very fine to fine grained, poorly sorted, dry, no odor.		
Total Depth @ 5' bgs.										

							Sample Name: PH02		Date: 5/30/2024	
							Site Name: Big Eddy Unit 34 Hackberry			
							Incident Number: nAPP2412351243			
							Job Number: 03C1558361			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: M. O'Dell		Method: Backhoe	
Coordinates: 32.621898, -103.851566							Hole Diameter: ~3		Total Depth: 6'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride measurements are calculated with a +40% correction factor.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
						0				
W	767	1,635	Y	PH02	0.5		CCHE/ SW	Caliche/Sand. Brown, very fine to fine grained, well graded, wet, stained, strong odor.		
W	840	1,471	Y		1	1				
D	633	488	Y		2	2	SW	Sand. Tan - brown, very fine to fine grained, well graded, strong odor, staining, dry.		
D	358	0.0	N		3	3				
D	1,182	23.5	N	PH02A	4	4	SP	Sand. Light brown, poorly graded, very fine to no staining, odor, dry.		
D	894	54.8	N		5	5				
D	235	0.0	N			6		Tan, no staining, slight odor.		
Total Depth at 6' bgs.										
										

					Sample Name: PH03		Date: 5/30/2024	
					Site Name: Big Eddy Unit 34 Hackberry			
					Incident Number: nAPP2412351243			
					Job Number: 03C1558361			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Logged By: M. O'Dell		Method: Backhoe	
Coordinates: 32.621973, -103.851419					Hole Diameter: ~3		Total Depth: 4'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride measurements are calculated with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	403.2	601	N	PH03	0.5	0	CCHE/SW	Caliche/Sand. Brown, very fine to fine grained, well graded, wet, no staining, strong odor.
D	454	52.5	N		1	1		
D	454	0.0	N		2	2	SW	Sand. Brown, very fine to fine grained, well graded, strong odor, no staining, dry.
D	358	1.6	N		3	3		
D	454	1.9	N	PH03A	4	4	SP	Sand. Light brown, poorly graded, very fine to no staining, odor, dry.
Total Depth @ 4' bgs.								
								

					Sample Name: BH01		Date: 6/27/2024	
					Site Name: Big Eddy Unit 34 Hackberry			
					Incident Number: nAPP2412351243			
					Job Number: 03C1558361			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Logged By: Omar Hamdy		Method: Hand Auger	
Coordinates: 32.621987, -103.851724					Hole Diameter: ~4"		Total Depth: 1'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride measurements are calculated with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	403	0.0	N	BH01	0.5	0	CCHE/SW	Caliche/Sand. Brown, very fine to fine grained, well graded, dry, no staining, strong odor.
D	235	0.0	N	BH01A	1	1		
Total Depth @ 1' bgs.								
								

		Sample Name: BH02		Date: 6/27/2024					
		Site Name: Big Eddy Unit 34 Hackberry							
		Incident Number: nAPP2412351243							
		Job Number: 03C1558361							
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>									
Coordinates: 32.621838, -103.851732			Logged By: Omar Hamdy		Method: Hand Auger				
			Hole Diameter: ~4"		Total Depth: 2'				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride measurements are calculated with a +40% correction factor.									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions	
D	403	0.0	N	BH02	0.5	0	CCHE/SW	Caliche/Sand. Brown, very fine to fine grained, well graded, dry, no staining, strong odor.	
D	168	0.0	N		1	1			
M	235	0.0	N	BH02A	2	2	SW	Sand. Reddish brown, very fine to fine grained, well graded, odor, no staining, moist.	
Total Depth at 2' bgs									

					Sample Name: BH03		Date: 7/12/2024	
					Site Name: Big Eddy Unit 34 Hackberry			
					Incident Number: nAPP2412351243			
					Job Number: 03C1558361			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Logged By: M. O'Dell		Method: Hand Auger	
Coordinates: 32.621831, -103.851598					Hole Diameter: ~4"		Total Depth: 4'	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. All chloride measurements are calculated with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	2,358	0.0	N	BH03	0.5	0	CCHE/SW	Caliche/Sand. Brown, very fine to fine grained, well graded, dry, no staining, strong odor.
D	2,201	0.0	N		1	1		
M	571	0.0	N	BH03A	2	2	SW	Sand. Reddish brown, very fine to fine grained, well graded, odor, no staining, moist.
M	633	0.0	N		3	3		No odor
M	459	0.0	N		4	4		
Total Depth @ 4' bgs.								
								



## APPENDIX D

### Laboratory Analytical Reports & Chain of Custody Documentation

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

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May 28, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 34 HACKBERRY

Enclosed are the results of analyses for samples received by the laboratory on 05/21/24 12:45.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/21/2024	Sampling Date:	05/20/2024
Reported:	05/28/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SS 01 0' (H242785-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.805</b>	0.200	05/22/2024	ND	2.05	102	2.00	3.68	
<b>Toluene*</b>	<b>15.5</b>	0.200	05/22/2024	ND	2.05	103	2.00	1.34	
<b>Ethylbenzene*</b>	<b>17.4</b>	0.200	05/22/2024	ND	2.10	105	2.00	0.0285	
<b>Total Xylenes*</b>	<b>37.5</b>	0.600	05/22/2024	ND	6.24	104	6.00	0.334	
<b>Total BTEX</b>	<b>71.2</b>	1.20	05/22/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>128</b>	16.0	05/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: ms						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>1620</b>	50.0	05/21/2024	ND	212	106	200	2.41		
<b>DRO &gt;C10-C28*</b>	<b>45900</b>	50.0	05/21/2024	ND	196	97.8	200	1.91		
<b>EXT DRO &gt;C28-C36</b>	<b>5490</b>	50.0	05/21/2024	ND						

Surrogate: 1-Chlorooctane 293 % 48.2-134

Surrogate: 1-Chlorooctadecane 1100 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/21/2024	Sampling Date:	05/20/2024
Reported:	05/28/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SS 02 0' (H242785-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.300</b>	0.250	05/22/2024	ND	1.92	96.1	2.00	1.02	
<b>Toluene*</b>	<b>6.37</b>	0.500	05/22/2024	ND	1.91	95.5	2.00	2.51	QM-07
<b>Ethylbenzene*</b>	<b>7.16</b>	0.500	05/22/2024	ND	1.95	97.4	2.00	3.74	QM-07
<b>Total Xylenes*</b>	<b>14.9</b>	1.50	05/22/2024	ND	5.62	93.6	6.00	4.15	QM-07
<b>Total BTEX</b>	<b>28.8</b>	2.75	05/22/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>784</b>	16.0	05/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: ms						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>459</b>	50.0	05/21/2024	ND	212	106	200	2.41		
<b>DRO &gt;C10-C28*</b>	<b>34200</b>	50.0	05/21/2024	ND	196	97.8	200	1.91		
<b>EXT DRO &gt;C28-C36</b>	<b>4840</b>	50.0	05/21/2024	ND						

Surrogate: 1-Chlorooctane 174 % 48.2-134

Surrogate: 1-Chlorooctadecane 1060 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/21/2024	Sampling Date:	05/20/2024
Reported:	05/28/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SS 03 0' (H242785-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.250	0.250	05/22/2024	ND	1.92	96.1	2.00	1.02	
<b>Toluene*</b>	<b>0.915</b>	0.500	05/22/2024	ND	1.91	95.5	2.00	2.51	
<b>Ethylbenzene*</b>	<b>1.39</b>	0.500	05/22/2024	ND	1.95	97.4	2.00	3.74	
<b>Total Xylenes*</b>	<b>4.50</b>	1.50	05/22/2024	ND	5.62	93.6	6.00	4.15	
<b>Total BTEX</b>	<b>6.81</b>	2.75	05/22/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>19400</b>	16.0	05/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: ms						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>227</b>	50.0	05/21/2024	ND	212	106	200	2.41		
<b>DRO &gt;C10-C28*</b>	<b>39200</b>	50.0	05/21/2024	ND	196	97.8	200	1.91		
<b>EXT DRO &gt;C28-C36</b>	<b>5230</b>	50.0	05/21/2024	ND						

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 1030 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/21/2024	Sampling Date:	05/20/2024
Reported:	05/28/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SS 04 0' (H242785-04)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.250	0.250	05/22/2024	ND	1.92	96.1	2.00	1.02	
<b>Toluene*</b>	<b>2.60</b>	0.500	05/22/2024	ND	1.91	95.5	2.00	2.51	
<b>Ethylbenzene*</b>	<b>4.33</b>	0.500	05/22/2024	ND	1.95	97.4	2.00	3.74	
<b>Total Xylenes*</b>	<b>10.5</b>	1.50	05/22/2024	ND	5.62	93.6	6.00	4.15	
<b>Total BTEX</b>	<b>17.4</b>	2.75	05/22/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>17600</b>	16.0	05/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: ms						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>475</b>	50.0	05/21/2024	ND	212	106	200	2.41		
<b>DRO &gt;C10-C28*</b>	<b>34500</b>	50.0	05/21/2024	ND	196	97.8	200	1.91		
<b>EXT DRO &gt;C28-C36</b>	<b>4530</b>	50.0	05/21/2024	ND						

Surrogate: 1-Chlorooctane 127 % 48.2-134

Surrogate: 1-Chlorooctadecane 867 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/21/2024	Sampling Date:	05/20/2024
Reported:	05/28/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SS 05 0' (H242785-05)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.250	0.250	05/22/2024	ND	1.92	96.1	2.00	1.02	
<b>Toluene*</b>	<b>0.935</b>	0.500	05/22/2024	ND	1.91	95.5	2.00	2.51	
<b>Ethylbenzene*</b>	<b>2.06</b>	0.500	05/22/2024	ND	1.95	97.4	2.00	3.74	
<b>Total Xylenes*</b>	<b>6.72</b>	1.50	05/22/2024	ND	5.62	93.6	6.00	4.15	
<b>Total BTEX</b>	<b>9.72</b>	2.75	05/22/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>11400</b>	16.0	05/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: ms						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>304</b>	50.0	05/22/2024	ND	212	106	200	2.41		
<b>DRO &gt;C10-C28*</b>	<b>35800</b>	50.0	05/22/2024	ND	196	97.8	200	1.91		
<b>EXT DRO &gt;C28-C36</b>	<b>4190</b>	50.0	05/22/2024	ND						

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 903 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/21/2024	Sampling Date:	05/20/2024
Reported:	05/28/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SS 06 0' (H242785-06)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>6.33</b>	0.500	05/22/2024	ND	1.92	96.1	2.00	1.02	
<b>Toluene*</b>	<b>28.5</b>	0.500	05/22/2024	ND	1.91	95.5	2.00	2.51	
<b>Ethylbenzene*</b>	<b>17.3</b>	0.500	05/22/2024	ND	1.95	97.4	2.00	3.74	
<b>Total Xylenes*</b>	<b>36.9</b>	1.50	05/22/2024	ND	5.62	93.6	6.00	4.15	
<b>Total BTEX</b>	<b>89.1</b>	3.00	05/22/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>992</b>	16.0	05/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: ms						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>1610</b>	50.0	05/22/2024	ND	212	106	200	2.41		
<b>DRO &gt;C10-C28*</b>	<b>41500</b>	50.0	05/22/2024	ND	196	97.8	200	1.91		
<b>EXT DRO &gt;C28-C36</b>	<b>4710</b>	50.0	05/22/2024	ND						

Surrogate: 1-Chlorooctane 226 % 48.2-134

Surrogate: 1-Chlorooctadecane 1090 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

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

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Ensolum, LLC  
 Project Manager: Ben Bellill  
 Address: 3122 National Parks Hwy  
 City: Carlsbad State: NM Zip: 88220  
 P.O. #: \_\_\_\_\_  
 Company: XTO Energy  
 Attn: Amy Ruth  
 Address: 3104 E Green St  
 City: Carlsbad State: NM Zip: 88220  
 Project #: 03C1558361 Project Owner: XTO  
 Project Name: Big Fiddy Unit 34 Hackberry  
 Project Location: 32,62201,-103,85107  
 Phone #: \_\_\_\_\_  
 State: NM Zip: 88220  
 Project Name: \_\_\_\_\_  
 Project Location: \_\_\_\_\_  
 Phone #: \_\_\_\_\_  
 Project Name: \_\_\_\_\_  
 Project Location: \_\_\_\_\_  
 Phone #: \_\_\_\_\_

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
184085	SS01	0'									5/10/24	12:40	X BTEX
	SS02											12:45	X TPH
	SS03											12:56	X Chloride
	SS04											12:55	
	SS05											13:00	
	SS06											13:05	

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Relinquished By: Omar Handy  
 Date: 5/21/24  
 Received By: Sproedriguey  
 Date: 5/21/24  
 Turnaround Time: \_\_\_\_\_  
 Standard  **RUSH**  
 Thermometer ID #444-#140  
 Correction Factor :0.5°C  
 Bacteria (only)   
 Cool Intact   
 Observed Temp. °C \_\_\_\_\_  
 Corrected Temp. °C \_\_\_\_\_

Delivered By: (Circle One) \_\_\_\_\_  
 Corrected Temp. °C 28.2  
 Sample Condition  Cool Intact   
 CHECKED BY: (Initials) \_\_\_\_\_  
 Remarks: \_\_\_\_\_



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June 06, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 34 HACKBERRY

Enclosed are the results of analyses for samples received by the laboratory on 05/31/24 16:13.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/31/2024	Sampling Date:	05/30/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shari Cisneros
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: PH 01 0.5' (H243091-01)**

BTEX 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	06/05/2024	ND	1.97	98.3	2.00	8.85	
<b>Toluene*</b>	<b>1.59</b>	0.100	06/05/2024	ND	1.96	97.8	2.00	4.78	
<b>Ethylbenzene*</b>	<b>8.60</b>	0.100	06/05/2024	ND	1.94	97.2	2.00	4.19	
<b>Total Xylenes*</b>	<b>31.4</b>	0.300	06/05/2024	ND	5.67	94.5	6.00	4.37	
<b>Total BTEX</b>	<b>41.6</b>	0.600	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 425 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>176</b>	16.0	06/05/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>705</b>	10.0	06/04/2024	ND	194	97.2	200	0.581	
<b>DRO &gt;C10-C28*</b>	<b>4520</b>	10.0	06/04/2024	ND	182	91.2	200	1.41	
<b>EXT DRO &gt;C28-C36</b>	<b>694</b>	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 175 % 48.2-134

Surrogate: 1-Chlorooctadecane 185 % 49.1-148

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



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/31/2024	Sampling Date:	05/30/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shari Cisneros
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: PH 01A 4' (H243091-02)**

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	06/05/2024	ND	1.97	98.3	2.00	8.85	
Toluene*	<0.050	0.050	06/05/2024	ND	1.96	97.8	2.00	4.78	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.94	97.2	2.00	4.19	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.67	94.5	6.00	4.37	
Total BTEX	<0.300	0.300	06/05/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/05/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	194	97.2	200	0.581	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	182	91.2	200	1.41	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 49.1-148

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



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/31/2024	Sampling Date:	05/30/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shari Cisneros
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: PH 02 0.5' (H243091-03)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>1.97</b>	1.00	06/05/2024	ND	1.94	97.2	2.00	2.64	GC-NC1
<b>Toluene*</b>	<b>38.7</b>	1.00	06/05/2024	ND	1.91	95.5	2.00	3.68	
<b>Ethylbenzene*</b>	<b>39.8</b>	1.00	06/05/2024	ND	1.77	88.4	2.00	6.68	
<b>Total Xylenes*</b>	<b>93.2</b>	3.00	06/05/2024	ND	5.51	91.8	6.00	6.85	
<b>Total BTEX</b>	<b>174</b>	6.00	06/05/2024	ND					GC-NC1

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>832</b>	16.0	06/05/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>2240</b>	10.0	06/04/2024	ND	194	97.2	200	0.581		
<b>DRO &gt;C10-C28*</b>	<b>6460</b>	10.0	06/04/2024	ND	182	91.2	200	1.41		
<b>EXT DRO &gt;C28-C36</b>	<b>874</b>	10.0	06/04/2024	ND						

Surrogate: 1-Chlorooctane 144 % 48.2-134

Surrogate: 1-Chlorooctadecane 208 % 49.1-148

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



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/31/2024	Sampling Date:	05/30/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shari Cisneros
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: PH 02A 3' (H243091-04)**

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	06/04/2024	ND	1.94	97.2	2.00	2.64	
<b>Toluene*</b>	<b>0.062</b>	0.050	06/04/2024	ND	1.91	95.5	2.00	3.68	
Ethylbenzene*	<0.050	0.050	06/04/2024	ND	1.77	88.4	2.00	6.68	
Total Xylenes*	<0.150	0.150	06/04/2024	ND	5.51	91.8	6.00	6.85	
Total BTEX	<0.300	0.300	06/04/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>448</b>	16.0	06/05/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	194	97.2	200	0.581	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	182	91.2	200	1.41	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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\*=Accredited Analyte

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/31/2024	Sampling Date:	05/30/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shari Cisneros
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: PH 03 0.5' (H243091-05)**

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	06/04/2024	ND	1.94	97.2	2.00	2.64	
<b>Toluene*</b>	<b>0.210</b>	0.050	06/04/2024	ND	1.91	95.5	2.00	3.68	
<b>Ethylbenzene*</b>	<b>1.46</b>	0.050	06/04/2024	ND	1.77	88.4	2.00	6.68	
<b>Total Xylenes*</b>	<b>3.08</b>	0.150	06/04/2024	ND	5.51	91.8	6.00	6.85	
<b>Total BTEX</b>	<b>4.75</b>	0.300	06/04/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>320</b>	16.0	06/05/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>103</b>	10.0	06/04/2024	ND	194	97.2	200	0.581		
<b>DRO &gt;C10-C28*</b>	<b>1710</b>	10.0	06/04/2024	ND	182	91.2	200	1.41		
<b>EXT DRO &gt;C28-C36</b>	<b>312</b>	10.0	06/04/2024	ND						

Surrogate: 1-Chlorooctane 119 % 48.2-134

Surrogate: 1-Chlorooctadecane 173 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	05/31/2024	Sampling Date:	05/30/2024
Reported:	06/06/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shari Cisneros
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: PH 03A 4' (H243091-06)**

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	06/04/2024	ND	1.94	97.2	2.00	2.64	
Toluene*	<0.050	0.050	06/04/2024	ND	1.91	95.5	2.00	3.68	
Ethylbenzene*	<0.050	0.050	06/04/2024	ND	1.77	88.4	2.00	6.68	
Total Xylenes*	<0.150	0.150	06/04/2024	ND	5.51	91.8	6.00	6.85	
Total BTEX	<0.300	0.300	06/04/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>480</b>	16.0	06/05/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	194	97.2	200	0.581	
<b>DRO &gt;C10-C28*</b>	<b>37.2</b>	10.0	06/04/2024	ND	182	91.2	200	1.41	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 49.1-148

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



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Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference.
QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD.
GC-NC1 8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
BS-3 Blank spike recovery outside of lab established statistical limits, but still within method limits.
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
\*\* Samples not received at proper temperature of 6°C or below.
\*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Handwritten signature of Mike Snyder

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





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

---

June 07, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 34 HACKBERRY

Enclosed are the results of analyses for samples received by the laboratory on 06/03/24 16:23.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 01 4' (H243120-01)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.0 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	06/06/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	214	107	200	2.55	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 83.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.2 % 49.1-148

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



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 02 4' (H243120-02)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>256</b>	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
<b>DRO &gt;C10-C28*</b>	<b>39.9</b>	10.0	06/04/2024	ND	214	107	200	2.55	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 90.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.8 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SW 01 0-4' (H243120-03)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>224</b>	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
<b>DRO &gt;C10-C28*</b>	<b>62.2</b>	10.0	06/04/2024	ND	214	107	200	2.55	
<b>EXT DRO &gt;C28-C36</b>	<b>15.2</b>	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 94.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.6 % 49.1-148

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



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SW 02 0-4' (H243120-04)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>496</b>	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
<b>DRO &gt;C10-C28*</b>	<b>362</b>	10.0	06/04/2024	ND	214	107	200	2.55	
<b>EXT DRO &gt;C28-C36</b>	<b>135</b>	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 98.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 03 4' (H243120-05)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>432</b>	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
<b>DRO &gt;C10-C28*</b>	<b>28.4</b>	10.0	06/04/2024	ND	214	107	200	2.55	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 95.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.0 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 04 4' (H243120-06)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2480	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
DRO >C10-C28*	122	10.0	06/04/2024	ND	214	107	200	2.55	
EXT DRO >C28-C36	35.4	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SW 03 0-4' (H243120-07)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.1 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>688</b>	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
<b>DRO &gt;C10-C28*</b>	<b>18.8</b>	10.0	06/04/2024	ND	214	107	200	2.55	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SW 04 0-4' (H243120-08)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
DRO >C10-C28*	<10.0	10.0	06/04/2024	ND	214	107	200	2.55	
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 80.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.9 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 05 4' (H243120-09)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294		
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939		
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47		
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59		
Total BTEX	<0.300	0.300	06/05/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1120	16.0	06/06/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88		
DRO >C10-C28*	12.9	10.0	06/04/2024	ND	214	107	200	2.55		
EXT DRO >C28-C36	<10.0	10.0	06/04/2024	ND						

Surrogate: 1-Chlorooctane 90.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.2 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 06 4' (H243120-10)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2024	ND	190	94.8	200	2.88	
DRO >C10-C28*	38.4	10.0	06/04/2024	ND	214	107	200	2.55	
EXT DRO >C28-C36	15.1	10.0	06/04/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 07 4' (H243120-11)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294		
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939		
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47		
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59		
Total BTEX	<0.300	0.300	06/05/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	576	16.0	06/06/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/05/2024	ND	190	94.8	200	2.88		
DRO >C10-C28*	<10.0	10.0	06/05/2024	ND	214	107	200	2.55		
EXT DRO >C28-C36	<10.0	10.0	06/05/2024	ND						

Surrogate: 1-Chlorooctane 98.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/03/2024	Sampling Date:	06/03/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 08 4' (H243120-12)**

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	06/05/2024	ND	1.92	96.2	2.00	0.294	
Toluene*	<0.050	0.050	06/05/2024	ND	1.92	96.1	2.00	0.939	
Ethylbenzene*	<0.050	0.050	06/05/2024	ND	1.79	89.5	2.00	1.47	
Total Xylenes*	<0.150	0.150	06/05/2024	ND	5.60	93.4	6.00	1.59	
Total BTEX	<0.300	0.300	06/05/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/06/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2024	ND	190	94.8	200	2.88	
DRO >C10-C28*	13.5	10.0	06/05/2024	ND	214	107	200	2.55	
EXT DRO >C28-C36	<10.0	10.0	06/05/2024	ND					

Surrogate: 1-Chlorooctane 94.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.0 % 49.1-148

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



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Notes and Definitions

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

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Handwritten signature of Mike Snyder

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



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

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

**BILL TO**

**ANALYSIS REQUEST**

Company Name: **Ensolium, LLC**  
 Project Manager: **Ben Bellill**  
 Address: **601 N. Marterfield St. STE 400 3122 National Parks Hwy**  
 City: **Midland Carlsbad** State: **NM** Zip: **79704 88220**  
 Phone #: **989-854-0852** Fax #: **989-854-0852**  
 Project #: **03C 1558301** Project Owner:  
 Project Name: **Big Eddy Unit 34 Hackberry**  
 Project Location: **32.021892, -103.851520**  
 Sampler Name: **Mariah O'Dell**

P.O. #: **XTO Energy**  
 Company: **XTO Energy**  
 Attn: **Amy Ruth**  
 Address: **3104 E. Greenest**  
 City: **Carlsbad**  
 State: **NM** Zip: **88220**  
 Phone #: **989-854-0852**  
 Fax #: **989-854-0852**

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
H2413120	FS01	4'	C	1			X				6/3/2024	8:35	X Chlorides
	FS02	4'	C	1			X				6/3/2024	8:40	X TPH
	SW01	0-4'									6/3/2024	8:45	X BTEX
	SW02	0-4'									6/3/2024	9:10	
	FS03	4'									6/3/2024	12:30	
	FS04	4'									6/3/2024	12:40	
	SW03	0-4'									6/3/2024	12:45	
	SW04	0-4'									6/3/2024	12:50	
	FS05	4'									6/3/2024	13:05	
	FS010	4'									6/3/2024	13:05	

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Relinquished By: *[Signature]* Date: **07/23/24**  
 Received By: *[Signature]* Date: **07/23/24**  
 Relinquished By: *[Signature]* Date: **07/23/24**  
 Received By: *[Signature]* Date: **07/23/24**

Delivered By: (Circle One) Observed Temp. °C **54.0**  
 Corrected Temp. °C **54.0**  
 Sampler - UPS - Bus - Other:  UPS  Bus  Other

Sample Condition: Cool Intact  Yes  No  
 Checked By: *[Signature]*

Turnaround Time:  Standard  Rush  
 Thermometer ID: #443-11324100  
 Correction Factor: -0.5°C

REMARKS: Incident #: NAPP02412351243  
 Facility ID: FRP2120341005  
 Cost Center: 1082401001

Bacteria (only) Sample Condition: Cool Intact  Yes  No  
 Observed Temp. °C  Yes  No  
 Corrected Temp. °C  Yes  No



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

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

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Ensolum, LLC  
 Project Manager: Ben Bell  
 Address: 601 N. Marnefeld St STE 400 3122 National Parks Hwy  
 City: Midland Carlsbad State: TX Zip: 79701-88220  
 Phone #: 989-854-0852 Fax #: 989-854-0852  
 Project #: 03C1558301 Project Owner: Big Eddy Unit 34 Hackberry  
 Project Location: 32. W21802, -103.851520  
 Sampler Name: Mahaha O'Dell  
 P.O. #: Company: XTO Energy  
 Attn: Amy Ruth  
 Address: 3104 E. Greene St  
 City: Carlsbad State: NM Zip: 88220  
 Phone #: Fax #:

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV	DATE	TIME	Analysis
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :				
H 24/312X	ES07	4'	C I		X					X	07/31/24	13:50	Chloride	
	ES08	4'	C I		X					X	07/31/24	13:55	TPH	
										X			BTEX	

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Relinquished By: [Signature] Date: 07/31/24 Time: 10:21  
 Received By: [Signature] Date: 08-24 Time: 11:23  
 Verbal Result:  Yes  No Add'l Phone #: [Blank]  
 All Results are emailed. Please provide Email address: [Blank]  
 Benthings@ensolum.com dbell@ensolum.com, modelle@ensolum.com  
 REMARKS: INCIDENT # : NAPP2412351243  
 Facility ID : FMP2120341045  
 Cost Center : 1082401001

Delivered By: (Circle One) Observed Temp. °C: 3.0 Corrected Temp. °C: [Blank]  
 Sampler - UPS - Bus - Other: Sample Condition Cool Intact:  Yes  No  
 Checked By: [Signature]  
 Turnaround Time: 5 Days Standard  Rush   
 Thermometer ID: #113404-321 Correction Factor: -0.5°C IVD  
 Bacteria (only) Cool Intact:  Yes  No  
 Sample Condition Observed Temp. °C: Corrected Temp. °C: [Blank]



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

June 07, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 34 HACKBERRY

Enclosed are the results of analyses for samples received by the laboratory on 06/04/24 15:58.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 09 4' (H243169-01)**

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	06/06/2024	ND	1.95	97.7	2.00	1.48	
Toluene*	<0.050	0.050	06/06/2024	ND	2.00	100	2.00	1.12	
Ethylbenzene*	<0.050	0.050	06/06/2024	ND	2.00	100	2.00	0.769	
Total Xylenes*	<0.150	0.150	06/06/2024	ND	5.85	97.6	6.00	0.731	
Total BTEX	<0.300	0.300	06/06/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	06/07/2024	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291	
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	202	101	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 73.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.4 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 10 4' (H243169-02)**

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	06/07/2024	ND	2.03	102	2.00	4.26	
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13	
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30	
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93	
Total BTEX	<0.300	0.300	06/07/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>432</b>	16.0	06/07/2024	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291	
<b>DRO &gt;C10-C28*</b>	<b>19.1</b>	10.0	06/06/2024	ND	202	101	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 73.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.7 % 49.1-148

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\*=Accredited Analyte

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 11 4' (H243169-03)**

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	06/07/2024	ND	2.03	102	2.00	4.26		
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13		
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30		
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93		
Total BTEX	<0.300	0.300	06/07/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	592	16.0	06/07/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291		
DRO >C10-C28*	47.3	10.0	06/06/2024	ND	202	101	200	2.95		
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND						

Surrogate: 1-Chlorooctane 81.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SW 05 0-4' (H243169-04)**

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	06/07/2024	ND	2.03	102	2.00	4.26	
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13	
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30	
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93	
Total BTEX	<0.300	0.300	06/07/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	06/07/2024	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291	
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	202	101	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 77.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.3 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 12 4' (H243169-05)**

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	06/07/2024	ND	2.03	102	2.00	4.26	
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13	
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30	
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93	
Total BTEX	<0.300	0.300	06/07/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>288</b>	16.0	06/07/2024	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291	
<b>DRO &gt;C10-C28*</b>	<b>38.0</b>	10.0	06/06/2024	ND	202	101	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 73.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.0 % 49.1-148

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



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 13 4' (H243169-06)**

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	06/07/2024	ND	2.03	102	2.00	4.26		
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13		
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30		
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93		
Total BTEX	<0.300	0.300	06/07/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	736	16.0	06/07/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291		
DRO >C10-C28*	14.1	10.0	06/06/2024	ND	202	101	200	2.95		
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND						

Surrogate: 1-Chlorooctane 75.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.8 % 49.1-148

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\*=Accredited Analyte

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



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SW 06 0-4' (H243169-07)**

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	06/07/2024	ND	2.03	102	2.00	4.26	
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13	
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30	
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93	
Total BTEX	<0.300	0.300	06/07/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>560</b>	16.0	06/07/2024	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291	
<b>DRO &gt;C10-C28*</b>	<b>16.7</b>	10.0	06/06/2024	ND	202	101	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 73.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.3 % 49.1-148

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\*=Accredited Analyte

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: SW 07 0-4' (H243169-08)**

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	06/07/2024	ND	2.03	102	2.00	4.26	
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13	
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30	
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93	
Total BTEX	<0.300	0.300	06/07/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	928	16.0	06/07/2024	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291	
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	202	101	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 60.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 72.6 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 14 4' (H243169-09)**

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	06/07/2024	ND	2.03	102	2.00	4.26		
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13		
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30		
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93		
Total BTEX	<0.300	0.300	06/07/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	06/07/2024	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291		
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	202	101	200	2.95		
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND						

Surrogate: 1-Chlorooctane 77.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.8 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 15 4' (H243169-10)**

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	06/07/2024	ND	2.03	102	2.00	4.26		
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13		
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30		
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93		
Total BTEX	<0.300	0.300	06/07/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	06/07/2024	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291		
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	202	101	200	2.95		
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND						

Surrogate: 1-Chlorooctane 98.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 125 % 49.1-148

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



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/04/2024	Sampling Date:	06/04/2024
Reported:	06/07/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.62201, -103.85107		

**Sample ID: FS 16 4' (H243169-11)**

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	06/07/2024	ND	2.03	102	2.00	4.26		
Toluene*	<0.050	0.050	06/07/2024	ND	2.15	107	2.00	4.13		
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.19	109	2.00	4.30		
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.71	112	6.00	3.93		
Total BTEX	<0.300	0.300	06/07/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	06/07/2024	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/06/2024	ND	206	103	200	0.291		
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	202	101	200	2.95		
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND						

Surrogate: 1-Chlorooctane 82.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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



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Notes and Definitions

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

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



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

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

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Ensolum, LLC  
 Project Manager: Ben Belli  
 Address: 604 N. Marland St. STE 400- 3122 National Parks Hwy  
 City: Midland- Carlsbad State: TX NY Zip: 79704-88220  
 Phone #: 999-854-0852 Fax #:   
 Project #: 03615583101 Project Owner:   
 Project Name: Big Eddy Unit 34 Hackberry  
 Project Location: 32.021892, -103.851520  
 Sampler Name: Mariaha O'Dell

P.O. #:   
 Company: XTO Energy  
 Attn: Amy Ruth  
 Address: 3104 E. Greenest  
 City: Carlsbad  
 State: NM Zip: 88220  
 Phone #:   
 Fax #:

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
H2431001	FS09	4'	C	1							6/4/24	10:35	Chlorides
	FS10	4'	C	1							6/4/24	10:40	TPH
	FS11	4'	C	1							6/4/24	10:45	BTEX
	SW05	0-4'									6/4/24	12:15	
	FS12	4'									6/4/24	12:20	
	FS13	4'									6/4/24	12:25	
	SW06	0-4'									6/4/24	12:45	
	SW07	0-4'									6/4/24	12:50	
	FS14	4'									6/4/24	12:55	
	FS15	4'									6/4/24	13:00	

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Relinquished By: *[Signature]*  
 Date: 6/4/2024  
 Time: 15:50

Received By: *[Signature]*  
 Date: 6/4/24  
 Time: 15:58

Delivered By: (Circle One) Observed Temp. °C  
 Sampler - UPS - Bus - Other: Corrected Temp. °C  
 Sample Condition Cool Intact  
 Yes  No  
 Checked By: (Initials) *[Signature]*  
 Turnaround Time: Standard  Rush   
 Thermometer ID #143 Bacteria (only) Sample Condition  
 Yes  No  Yes  No  
 Correction Factor -0.5°C Corrected Temp. °C

REMARKS: Incident #: NAPP2412351243  
 Facility ID: FAPP2120341405  
 Cost Center: 10824101001  
 Verbal Result:  Yes  No Add'l Phone #:   
 All Results are emailed. Please provide Email address:   
 Bellenhage@ensolum.com; bbelli@ensolum.com; modelle@ensolum.com

† 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**

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Ensolum, LLC  
 Project Manager: Ben Bellill  
 Address: 604 N. Marientfield St. STE 400 3122 NATIONAL PARKS HWY  
 City: Midland Carlsbad State: NM Zip: 79701 88220  
 Phone #: 989-854-0852 Fax #:  
 Project #: 0361558361 Project Owner:  
 Project Name: Big Eddy Unit 34 Hackberry  
 Project Location: 32.1021892, -103.851520  
 Sampler Name: Mariaha O'Dell

P.O. #:  
 Company: XTO Energy  
 Attn: Amy Ruth  
 Address: 3104 E. Overcrest  
 City: Carlsbad  
 State: NM Zip: 88220  
 Phone #:  
 Fax #:

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	DATE	TIME	ANALYSIS REQUEST
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :				
H23169	FSLU	4'	C 1		X						X	6/14/24 13:05	Chlorides	
											X		TPH	
											X		BTEX	

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Relinquished By: [Signature]  
 Date: 6/14/2024  
 Time: 15:56  
 Received By: [Signature]  
 Date: 6/14/24  
 Time: 15:58

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other:  
 Observed Temp. °C: 19  
 Corrected Temp. °C:  
 Sample Condition Cool Intact  
 Yes  No  
 CHECKED BY: [Signature]  
 Turnaround Time: 5 days Standard Rush  
 Thermometer ID: #443  
 Correction Factor: -0.5°C  
 Bacteria (only) Sample Condition Cool Intact  
 Yes  No  
 Observed Temp. °C: Corrected Temp. °C:

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



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July 05, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 34 HACKBERRY

Enclosed are the results of analyses for samples received by the laboratory on 06/28/24 11:31.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. 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  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/28/2024	Sampling Date:	06/27/2024
Reported:	07/05/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.621919-103.851519		

**Sample ID: BH 01 0.5' (H243893-01)**

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	07/04/2024	ND	1.98	99.1	2.00	5.75	
Toluene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	5.95	
Ethylbenzene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	6.68	
Total Xylenes*	<0.150	0.150	07/04/2024	ND	6.60	110	6.00	6.18	
Total BTEX	<0.300	0.300	07/04/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>368</b>	16.0	07/03/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/02/2024	ND	199	99.4	200	3.66	
<b>DRO &gt;C10-C28*</b>	<b>111</b>	10.0	07/02/2024	ND	181	90.4	200	2.92	
<b>EXT DRO &gt;C28-C36</b>	<b>55.3</b>	10.0	07/02/2024	ND					

Surrogate: 1-Chlorooctane 95.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.6 % 49.1-148

Cardinal Laboratories

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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  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/28/2024	Sampling Date:	06/27/2024
Reported:	07/05/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.621919-103.851519		

**Sample ID: BH 01 1' (H243893-02)**

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	07/04/2024	ND	1.98	99.1	2.00	5.75	
Toluene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	5.95	
Ethylbenzene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	6.68	
Total Xylenes*	<0.150	0.150	07/04/2024	ND	6.60	110	6.00	6.18	
Total BTEX	<0.300	0.300	07/04/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	07/03/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/02/2024	ND	199	99.4	200	3.66	
DRO >C10-C28*	359	10.0	07/02/2024	ND	181	90.4	200	2.92	
EXT DRO >C28-C36	231	10.0	07/02/2024	ND					

Surrogate: 1-Chlorooctane 98.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/28/2024	Sampling Date:	06/27/2024
Reported:	07/05/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.621919-103.851519		

**Sample ID: BH 02 0.5' (H243893-03)**

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	07/04/2024	ND	1.98	99.1	2.00	5.75	
Toluene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	5.95	
Ethylbenzene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	6.68	
Total Xylenes*	<0.150	0.150	07/04/2024	ND	6.60	110	6.00	6.18	
Total BTEX	<0.300	0.300	07/04/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	07/03/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/03/2024	ND	199	99.4	200	3.66	
DRO >C10-C28*	481	10.0	07/03/2024	ND	181	90.4	200	2.92	
EXT DRO >C28-C36	316	10.0	07/03/2024	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/28/2024	Sampling Date:	06/27/2024
Reported:	07/05/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.621919-103.851519		

**Sample ID: BH 02 1' (H243893-04)**

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	07/04/2024	ND	1.98	99.1	2.00	5.75	
Toluene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	5.95	
Ethylbenzene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	6.68	
Total Xylenes*	<0.150	0.150	07/04/2024	ND	6.60	110	6.00	6.18	
Total BTEX	<0.300	0.300	07/04/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>256</b>	16.0	07/03/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/03/2024	ND	199	99.4	200	3.66	
<b>DRO &gt;C10-C28*</b>	<b>291</b>	10.0	07/03/2024	ND	181	90.4	200	2.92	
<b>EXT DRO &gt;C28-C36</b>	<b>198</b>	10.0	07/03/2024	ND					

Surrogate: 1-Chlorooctane 99.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	06/28/2024	Sampling Date:	06/27/2024
Reported:	07/05/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.621919-103.851519		

**Sample ID: BH 02 2' (H243893-05)**

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	07/04/2024	ND	1.98	99.1	2.00	5.75	
Toluene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	5.95	
Ethylbenzene*	<0.050	0.050	07/04/2024	ND	2.14	107	2.00	6.68	
Total Xylenes*	<0.150	0.150	07/04/2024	ND	6.60	110	6.00	6.18	
Total BTEX	<0.300	0.300	07/04/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	07/03/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/03/2024	ND	199	99.4	200	3.66	
DRO >C10-C28*	264	10.0	07/03/2024	ND	181	90.4	200	2.92	
EXT DRO >C28-C36	163	10.0	07/03/2024	ND					

Surrogate: 1-Chlorooctane 92.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.8 % 49.1-148

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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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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager





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

July 23, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 34 HACKBERRY

Enclosed are the results of analyses for samples received by the laboratory on 07/12/24 15:14.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

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

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

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

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: BIG EDDY UNIT 34 HACKBERRY Project Number: 03C1558361 Project Manager: BEN BELILL Fax To:	Reported: 23-Jul-24 15:19
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS 17 4'	H244184-01	Soil	12-Jul-24 08:45	12-Jul-24 15:14
SW 08 0-4'	H244184-02	Soil	12-Jul-24 08:40	12-Jul-24 15:14

07/23/24 - Client changed the sample ID on -02 (see COC). This is the revised report and will replace the one sent on 07/15/24.

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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: BIG EDDY UNIT 34 HACKBERRY Project Number: 03C1558361 Project Manager: BEN BELILL Fax To:	Reported: 23-Jul-24 15:19
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**FS 17 4'**  
**H244184-01 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>352</b>		16.0	mg/kg	4	4071513	CT	15-Jul-24	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4071237	JH	13-Jul-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4071237	JH	13-Jul-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4071237	JH	13-Jul-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4071237	JH	13-Jul-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4071237	JH	13-Jul-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			112 %		71.5-134	4071237	JH	13-Jul-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4071202	MS	13-Jul-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4071202	MS	13-Jul-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4071202	MS	13-Jul-24	8015B	

Surrogate: 1-Chlorooctane			133 %		48.2-134	4071202	MS	13-Jul-24	8015B	
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Surrogate: 1-Chlorooctadecane			143 %		49.1-148	4071202	MS	13-Jul-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: BIG EDDY UNIT 34 HACKBERRY Project Number: 03C1558361 Project Manager: BEN BELILL Fax To:	Reported: 23-Jul-24 15:19
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**SW 08 0-4'  
H244184-02 (Soil)**

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

**Inorganic Compounds**

Chloride	160		16.0	mg/kg	4	4071513	CT	15-Jul-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4071237	JH	13-Jul-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4071237	JH	13-Jul-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4071237	JH	13-Jul-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4071237	JH	13-Jul-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4071237	JH	13-Jul-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			124 %		71.5-134	4071237	JH	13-Jul-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4071202	MS	13-Jul-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4071202	MS	13-Jul-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4071202	MS	13-Jul-24	8015B	

Surrogate: 1-Chlorooctane			124 %		48.2-134	4071202	MS	13-Jul-24	8015B	
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Surrogate: 1-Chlorooctadecane			134 %		49.1-148	4071202	MS	13-Jul-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: BIG EDDY UNIT 34 HACKBERRY Project Number: 03C1558361 Project Manager: BEN BELILL Fax To:	Reported: 23-Jul-24 15:19
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**Inorganic Compounds - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4071513 - 1:4 DI Water</b>										
<b>Blank (4071513-BLK1)</b>										
Prepared & Analyzed: 15-Jul-24										
Chloride	ND	16.0	mg/kg							
<b>LCS (4071513-BS1)</b>										
Prepared & Analyzed: 15-Jul-24										
Chloride	432	16.0	mg/kg	400		108	80-120			
<b>LCS Dup (4071513-BSD1)</b>										
Prepared & Analyzed: 15-Jul-24										
Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20	

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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: BIG EDDY UNIT 34 HACKBERRY Project Number: 03C1558361 Project Manager: BEN BELILL Fax To:	Reported: 23-Jul-24 15:19
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**Volatile Organic Compounds by EPA Method 8021 - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4071237 - Volatiles**

**Blank (4071237-BLK1)**

Prepared & Analyzed: 12-Jul-24

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0581		mg/kg	0.0500		116	71.5-134			

**LCS (4071237-BS1)**

Prepared & Analyzed: 12-Jul-24

Benzene	2.24	0.050	mg/kg	2.00		112	82.8-130			
Toluene	2.34	0.050	mg/kg	2.00		117	86-128			
Ethylbenzene	2.52	0.050	mg/kg	2.00		126	85.9-128			
m,p-Xylene	5.18	0.100	mg/kg	4.00		129	89-129			
o-Xylene	2.58	0.050	mg/kg	2.00		129	86.1-125			BS-3
Total Xylenes	7.75	0.150	mg/kg	6.00		129	88.2-128			BS-3
Surrogate: 4-Bromofluorobenzene (PID)	0.0579		mg/kg	0.0500		116	71.5-134			

**LCS Dup (4071237-BSD1)**

Prepared & Analyzed: 12-Jul-24

Benzene	2.26	0.050	mg/kg	2.00		113	82.8-130	0.879	15.8	
Toluene	2.31	0.050	mg/kg	2.00		116	86-128	1.00	15.9	
Ethylbenzene	2.47	0.050	mg/kg	2.00		123	85.9-128	2.28	16	
m,p-Xylene	5.05	0.100	mg/kg	4.00		126	89-129	2.56	16.2	
o-Xylene	2.50	0.050	mg/kg	2.00		125	86.1-125	3.23	16.7	
Total Xylenes	7.54	0.150	mg/kg	6.00		126	88.2-128	2.78	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0557		mg/kg	0.0500		111	71.5-134			

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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 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: BIG EDDY UNIT 34 HACKBERRY Project Number: 03C1558361 Project Manager: BEN BELILL Fax To:	Reported: 23-Jul-24 15:19
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**Petroleum Hydrocarbons by GC FID - Quality Control**

**Cardinal Laboratories**

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

**Batch 4071202 - General Prep - Organics**

<b>Blank (4071202-BLK1)</b>		Prepared: 12-Jul-24 Analyzed: 13-Jul-24								
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	47.4		mg/kg	50.0		94.8	48.2-134			
Surrogate: 1-Chlorooctadecane	48.8		mg/kg	50.0		97.6	49.1-148			

<b>LCS (4071202-BS1)</b>		Prepared: 12-Jul-24 Analyzed: 13-Jul-24								
GRO C6-C10	223	10.0	mg/kg	200		111	66.4-123			
DRO >C10-C28	219	10.0	mg/kg	200		110	66.5-118			
Total TPH C6-C28	442	10.0	mg/kg	400		110	77.6-123			
Surrogate: 1-Chlorooctane	51.2		mg/kg	50.0		102	48.2-134			
Surrogate: 1-Chlorooctadecane	52.4		mg/kg	50.0		105	49.1-148			

<b>LCS Dup (4071202-BSD1)</b>		Prepared: 12-Jul-24 Analyzed: 13-Jul-24								
GRO C6-C10	216	10.0	mg/kg	200		108	66.4-123	2.88	17.7	
DRO >C10-C28	203	10.0	mg/kg	200		101	66.5-118	7.75	21	
Total TPH C6-C28	419	10.0	mg/kg	400		105	77.6-123	5.27	18.5	
Surrogate: 1-Chlorooctane	49.5		mg/kg	50.0		99.1	48.2-134			
Surrogate: 1-Chlorooctadecane	52.0		mg/kg	50.0		104	49.1-148			

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

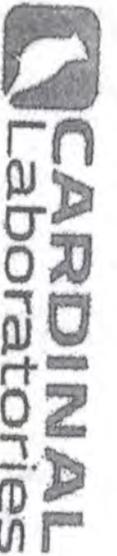
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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: Ensochem, LLC  
 Project Manager: Ben Belli  
 Address: 3122 National Parks Hwy  
 City: Carlsbad State: NM Zip: 88220  
 Phone #: (989) 854-0852 Fax #:  
 Project #: 03G1558301 Project Owner:  
 Project Name: Big Eddy Unit 34 Hackberry  
 Project Location: 32.1221892 -103.8515207  
 Sampler Name: Mariah O'Bell  
 P.O. #: Company: XTO Energy  
 Attn: Amy Ruth  
 Address: 3104 E. Green St  
 City: Carlsbad State: NM Zip: 88220  
 Phone #:  
 Fax #:

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	Chloride	TPH	BTEX
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
1844184	ES17	4'	C	1	<input checked="" type="checkbox"/>	7/12/24	8:45	X	X	X					
	SMD 18*	0-4'	C	1	<input checked="" type="checkbox"/>	7/12/24	8:40	X	X	X					
	RH05	0-5'	G	1	<input checked="" type="checkbox"/>	11/24/12	00	X	X	X					
	RH03A	4'	G	1	<input checked="" type="checkbox"/>	12-20		X	X	X					

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Relinquished By: *[Signature]*  
 Date: 7/12/24  
 Time: 13:14  
 Received By: *[Signature]*  
 Date: 7/12/24  
 Time:

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other:  
 Observed Temp. °C: 55.4  
 Corrected Temp. °C: 55.4  
 Checked By: *[Signature]*

Turnaround Time: 24 hrs  
 Standard:  Bacteria (only) Sample Condition:  Cool Inhibit  
 Observed Temp. °C:  Yes  
 Corrected Temp. °C:  No

Vertical Result:  Yes  No / Add'l Phone #:  
 All Results are emailed. Please provide Email address:  
 dbelli@ensolum.com, modelle@ensolum.com  
 REMARKS: F acidity ID: APP212034IU05 \*Customer requested  
 Incident #: APP0412351243 ID change  
 Cost center: 1082461001  
 Turnaround Time: 24 hrs  
 Standard:  Bacteria (only) Sample Condition:  Cool Inhibit  
 Observed Temp. °C:  Yes  
 Corrected Temp. °C:  No  
 † Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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

---

July 18, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 34 HACKBERRY

Enclosed are the results of analyses for samples received by the laboratory on 07/12/24 15:14.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. 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, flowing "C" at the beginning.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	07/12/2024	Sampling Date:	07/12/2024
Reported:	07/18/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.621892,-103.851520		

**Sample ID: BH 03 0.5' (H244187-01)**

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	07/18/2024	ND	2.10	105	2.00	4.24	
Toluene*	<0.050	0.050	07/18/2024	ND	2.28	114	2.00	4.58	
Ethylbenzene*	<0.050	0.050	07/18/2024	ND	2.35	118	2.00	5.47	
Total Xylenes*	<0.150	0.150	07/18/2024	ND	7.29	122	6.00	4.59	
Total BTEX	<0.300	0.300	07/18/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1170	16.0	07/16/2024	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/16/2024	ND	181	90.5	200	6.12	
DRO >C10-C28*	379	10.0	07/16/2024	ND	176	88.2	200	11.5	
EXT DRO >C28-C36	228	10.0	07/16/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 132 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	07/12/2024	Sampling Date:	07/12/2024
Reported:	07/18/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.621892,-103.851520		

**Sample ID: BH 03A 4' (H244187-02)**

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	07/15/2024	ND	2.10	105	2.00	4.24	
Toluene*	<0.050	0.050	07/15/2024	ND	2.28	114	2.00	4.58	
Ethylbenzene*	<0.050	0.050	07/15/2024	ND	2.35	118	2.00	5.47	
Total Xylenes*	<0.150	0.150	07/15/2024	ND	7.29	122	6.00	4.59	
Total BTEX	<0.300	0.300	07/15/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	07/16/2024	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/15/2024	ND	181	90.5	200	6.12	
DRO >C10-C28*	<10.0	10.0	07/15/2024	ND	176	88.2	200	11.5	
EXT DRO >C28-C36	<10.0	10.0	07/15/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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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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Celey D. Keene, Lab Director/Quality Manager





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---

July 24, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 34 HACKBERRY

Enclosed are the results of analyses for samples received by the laboratory on 07/23/24 16:23.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. 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



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	07/23/2024	Sampling Date:	07/23/2024
Reported:	07/24/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.621892,-103.851520		

**Sample ID: SS07 0.5' (H244383-01)**

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	07/24/2024	ND	1.99	99.5	2.00	4.09	
Toluene*	<0.050	0.050	07/24/2024	ND	1.96	97.9	2.00	4.00	
Ethylbenzene*	<0.050	0.050	07/24/2024	ND	1.98	99.2	2.00	4.19	
Total Xylenes*	<0.150	0.150	07/24/2024	ND	5.87	97.9	6.00	3.87	
Total BTEX	<0.300	0.300	07/24/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	07/24/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2024	ND	212	106	200	1.24	
DRO >C10-C28*	<10.0	10.0	07/24/2024	ND	198	98.8	200	1.71	
EXT DRO >C28-C36	<10.0	10.0	07/24/2024	ND					

Surrogate: 1-Chlorooctane 128 % 48.2-134

Surrogate: 1-Chlorooctadecane 143 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
 BEN BELILL  
 3122 NATIONAL PARKS HWY  
 CARLSBAD NM, 88220  
 Fax To:

Received:	07/23/2024	Sampling Date:	07/23/2024
Reported:	07/24/2024	Sampling Type:	Soil
Project Name:	BIG EDDY UNIT 34 HACKBERRY	Sampling Condition:	Cool & Intact
Project Number:	03C1558361	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.621892,-103.851520		

**Sample ID: SS08 0.5' (H244383-02)**

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	07/24/2024	ND	1.99	99.5	2.00	4.09	
Toluene*	<0.050	0.050	07/24/2024	ND	1.96	97.9	2.00	4.00	
Ethylbenzene*	<0.050	0.050	07/24/2024	ND	1.98	99.2	2.00	4.19	
Total Xylenes*	<0.150	0.150	07/24/2024	ND	5.87	97.9	6.00	3.87	
Total BTEX	<0.300	0.300	07/24/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	07/24/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2024	ND	212	106	200	1.24	
DRO >C10-C28*	<10.0	10.0	07/24/2024	ND	198	98.8	200	1.71	
EXT DRO >C28-C36	<10.0	10.0	07/24/2024	ND					

Surrogate: 1-Chlorooctane 132 % 48.2-134

Surrogate: 1-Chlorooctadecane 139 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Notes and Definitions**

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

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Celey D. Keene, Lab Director/Quality Manager



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 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720  
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 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170  
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 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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QUESTIONS

Action 367470

**QUESTIONS**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 367470
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nAPP2412351243
Incident Name	NAPP2412351243 BIG EDDY UNIT 34 HACKBERRY @ 0
Incident Type	Oil Release
Incident Status	Remediation Closure Report Received

**Location of Release Source**

Please answer all the questions in this group.

Site Name	Big Eddy Unit 34 Hackberry
Date Release Discovered	04/26/2024
Surface Owner	Federal

**Incident Details**

Please answer all the questions in this group.

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

**Nature and Volume of Release**

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

Crude Oil Released (bbls) Details	Cause: Equipment Failure   Treating Tower   Crude Oil   Released: 12 BBL   Recovered: 10 BBL   Lost: 2 BBL.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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Action 367470

**QUESTIONS (continued)**

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**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 Subsection A of 19.15.29.7 NMAC	<b>No</b>
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>
<i>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.</i>	

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

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

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

I hereby agree and sign off to the above statement	Name: Kailee Smith Title: Regulatory Analyst Email: kailee.smith@exxonmobil.com Date: 05/02/2024
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1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

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811 S. First St., Artesia, NM 88210  
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**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
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	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

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

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

**Remediation Plan**

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

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

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

Chloride (EPA 300.0 or SM4500 Cl B)	2480
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	797
GRO+DRO (EPA SW-846 Method 8015M)	481
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0

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

On what estimated date will the remediation commence	05/20/2024
On what date will (or did) the final sampling or liner inspection occur	07/23/2024
On what date will (or was) the remediation complete(d)	07/23/2024
What is the estimated surface area (in square feet) that will be reclaimed	6950
What is the estimated volume (in cubic yards) that will be reclaimed	898
What is the estimated surface area (in square feet) that will be remediated	3000
What is the estimated volume (in cubic yards) that will be remediated	460

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

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

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 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720  
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Action 367470

**QUESTIONS (continued)**

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	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

**Remediation Plan (continued)**

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

**This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:**

(Select all answers below that apply.)

(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	HALFWAY DISPOSAL AND LANDFILL [FEEM0112334510]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

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

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

I hereby agree and sign off to the above statement	Name: Alan Romero Title: Regulatory Analyst Email: alan.romero1@exxonmobil.com Date: 07/25/2024
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The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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Action 367470

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
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	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

**Deferral Requests Only**

*Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.*

Requesting a deferral of the remediation closure due date with the approval of this submission	No
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 811 S. First St., Artesia, NM 88210  
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 1000 Rio Brazos Rd., Aztec, NM 87410  
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Action 367470

**QUESTIONS (continued)**

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	Action Number: 367470
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Sampling Event Information</b>	
Last sampling notification (C-141N) recorded	<b>360684</b>
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	<b>07/11/2024</b>
What was the (estimated) number of samples that were to be gathered	<b>20</b>
What was the sampling surface area in square feet	<b>4000</b>

**Remediation Closure Request**

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

Requesting a remediation closure approval with this submission	<b>Yes</b>
Have the lateral and vertical extents of contamination been fully delineated	<b>Yes</b>
Was this release entirely contained within a lined containment area	<b>No</b>
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	<b>Yes</b>
What was the total surface area (in square feet) remediated	<b>3000</b>
What was the total volume (cubic yards) remediated	<b>460</b>
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	<b>Yes</b>
What was the total surface area (in square feet) reclaimed	<b>6950</b>
What was the total volume (in cubic yards) reclaimed	<b>898</b>
Summarize any additional remediation activities not included by answers (above)	Site assessment, delineation, and excavation activities were conducted at the Site to address the April 2024, release of crude oil. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the Site Closure Criteria. Based on the soil sample analytical results, no further remediation was required. Based on laboratory analytical results from boreholes BH01 through BH03, waste-containing soil is underlying active production equipment and pipelines. An estimated 438 cubic yards of waste-containing soil is present in an area covering approximately 3,950 square-feet. The waste-containing soil will be removed at the time of final reclamation of the well pad or major facility deconstruction, whichever comes first. XTO has scheduled backfill of the excavation with material purchased locally for the week of July 29, 2024, and the area will be recontoured to match pre-existing site conditions.

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

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

I hereby agree and sign off to the above statement	Name: Alan Romero Title: Regulatory Analyst Email: alan.romero1@exxonmobil.com Date: 07/25/2024
--	--

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Action 367470

**QUESTIONS (continued)**

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	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Reclamation Report</b>	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	No

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CONDITIONS  
 Action 367470

**CONDITIONS**

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**CONDITIONS**

Created By	Condition	Condition Date
scwells	None	7/30/2024