



September 19, 2024

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: Remediation Work Plan
Big Eddy Unit 248H
Incident Number NAPP2418043567
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Remediation Work Plan (Work Plan)* to document the site assessment activities completed to date and propose a plan to address impacted soil identified at the Big Eddy Unit 248H (Site). The purpose of the site assessment activities was to assess the lateral and vertical extent of impacted soil resulting from a release of produced water and crude oil at the Site. The following *Work Plan* proposes to excavate impacted soil within the release extent.

SITE DESCRIPTION AND RELEASE SUMMARY

The release was initially reported at the incorrect location but following a review of initial release records, internal documents, and personnel communications, it was confirmed the release is located on the Big Eddy Unit 248H well pad. The majority of the release is located in Unit A, Section 35, Township 19 South, Range 31 East, in Eddy County, New Mexico (32.62087°, -103.83145°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM). However, a portion of the release occurred on State Land managed by New Mexico State Land Office (SLO) in Unit D, Section 36, Township 19 South, and Range 31 East.

On June 21, 2024, the packing on the stuffing box of the well failed, resulting in the release of approximately 5 barrels (bbls) of crude oil and 9 bbls of produced water onto the surface of the pad and lightly over-spraying the northwest area of the pad and surrounding pasture due the dominant wind direction that day. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 5 bbls of fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) and submitted a Notification of Release (NOR) and Initial C-141 Application (C-141) on June 28, 2024. The release was assigned Incident Number NAPP2418043567.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

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

XTO Energy, Inc.
Remediation Work Plan
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groundwater data is New Mexico Office of the State Engineer (NMOSE) well CP-641, located approximately 0.4 miles southeast of the Site. The depth to groundwater in the well, 130 feet bgs, was most recently measured on February 23, 1982. All wells used for depth to water determination are depicted on Figure 1 and the referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a lakebed approximately 12,400 feet southeast 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 nearest groundwater data exceeding 25 years in age, and no other data available within 0.5 miles as preferred by the NMOCD, the following 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): 100 mg/kg
- Chloride: 600 mg/kg

CULTURAL PROPERTIES

Since the release remained on pad in the area governed by SLO, the Site is exempt from the Cultural Properties Protection (CPP) Rule. As such no additional cultural resource surveys were completed in connection with this release.

SITE ASSESSMENT ACTIVITIES

On July 29, 2024, Ensolum personnel conducted a Site assessment to evaluate the release based on information provided on the C-141 and visual observations. Ensolum personnel identified the release extent, approximately 10,700 square feet, based on visual observations of stained soil. Ensolum personnel also identified an approximately 88,300 square-foot area in the northwest corner of the pad and pasture where high winds had carried a *de minimus* volume of fluid spray from the release. This area is considered an area of investigation. Ensolum personnel collected thirteen delineation soil samples (SS01 through SS13) within and around the release extent and area of investigation. The delineation soil samples were collected at a depth of 0.5 feet bgs to determine the presence or absence of impacted soil. 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, area of investigation, and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

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-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following Standards Method SM4500. Based on field screenings and laboratory analytical results, additional delineation of the release extent and further assessment of the area of investigation in the northwest corner of the pad and pasture was warranted.

XTO Energy, Inc.
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DELINEATION SOIL SAMPLING ACTIVITIES

On September 9, 2024, Ensolum returned to the Site to remove gross impacts and conduct additional delineation. Saturated soil was removed around the wellhead, but field screening results for VOCs and chloride in excavation soil samples indicated additional excavation was warranted. As such, two potholes (PH01 and PH02) were advanced within the release extent via a backhoe. Pothole PH01 was advanced within the excavation area near SS08 to a depth of 8 feet bgs. Pothole PH02 was advanced to 1-foot bgs and was located in the vicinity of SS05. Discrete delineation soil samples were collected from PH01 at 6 feet and 8 feet bgs and from PH02 at 1-foot bgs. Soil from the potholes was field screened, handled, and analyzed for the same COCs as described above. Field screening results and observations were logged on lithologic/soil sampling logs, which are included in Appendix B. Both delineation pothole locations are depicted on Figure 2. Photographic documentation was completed during all Site visits and is presented on a Photographic Log included in Appendix C.

On September 17, 2024, in order to further assess the area of investigation, Ensolum personnel collected ten additional delineation soil samples (SS14 through SS23) at a depth of 0.5 feet bgs within and around the area of investigation. The delineation soil samples were handled and analyzed following the same procedures described above.

Laboratory analytical results for delineation soil samples collected at 0.5 feet bgs within the release extent indicated TPH and chloride concentrations exceeded the Closure Criteria. Laboratory analytical results for the terminal depths of PH01 and PH02 indicated that all COCs were compliant with Closure Criteria and successfully defined the vertical extent of impacted soil. Laboratory analytical results for delineation soil samples collected at 0.5 feet bgs within and around the area of investigation in the northwest corner of the pad and surrounding pasture indicated all COCs were compliant with the Closure Criteria and confirmed the absence of impacted soil in that area. All laboratory analytical results are summarized on Table 1 and laboratory analytical reports are included in Appendix D.

VEGETATION SURVEY ACTIVITIES

On September 13, 2024, Ensolum personnel conducted a vegetation survey utilizing the line-point intercept (LPI) method to assess for the presence or absence of any biological indications of stress to the vegetation in the area of investigation. A staff biologist completed 1 LPI transect within the area of investigation and 1 LPI transect to the north in an undisturbed area. Each transect was 100 feet in length and mapped utilizing a handheld GPS unit as depicted on Figure 3. The staff biologist noted each time vegetation intersected the transect and recorded the length of the vegetation along the transect. The transects were completed along the same slope and direction. The staff biologist also recorded the observed health of the plant. Some stressed vegetation, that was indicative of heat stress and natural conditions, was noted throughout the area of investigation and surrounding pasture area. No indications of stress from the potential overspray were observed.

The LPI transect completed in an undisturbed area to the north, LPI-1, indicated a vegetation coverage of 27 percent (%). The LPI transect LPI-2 was completed in the area of investigation and indicated vegetation coverage of 26%. These observations suggest there have been no significant impacts to the vegetation in the area of investigation. The vegetation survey was conducted over 2 months after the release date, during which time any impacts would have become clearly visible. In addition, all laboratory analytical results for delineation soil samples collected in the area of investigation confirmed the absence of impacted soil in the area. Photographic documentation of the vegetation survey is presented in a Photographic Log provided in Appendix C.

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PROPOSED REMEDIATION WORK PLAN

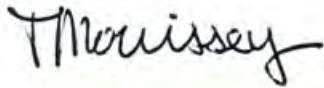
The delineation soil sampling results indicate soil containing elevated TPH and chloride concentrations exists across an approximate 10,700 square foot area in the release extent on pad and extends to depths ranging from 0.5 feet to 8 feet bgs. As such, XTO proposes to complete the following remediation activities:

- Excavation of TPH and chloride impacted soil has begun and will proceed vertically and laterally until sidewall samples confirm all COC concentrations are compliant with the Closure Criteria. The proposed excavation extent is depicted in Figure 4.
- An estimated 1,500 cubic yards of impacted soil will be excavated. The excavated soil will be transferred a New Mexico approved landfill facility for disposal.
- The excavation will be backfilled and recontoured to match pre-existing conditions. Reclamation and reseedling of the on-pad area will occur during pad abandonment.
- The area of investigation will continue to be monitored, and photo documentation of the vegetation will be included in the final *Closure Report*.

XTO will complete the excavation and soil sampling activities within 90 days of the date of approval of this *Work Plan* by the NMOCD.

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

Sincerely,
Ensolum, LLC



Tacoma Morrissey, MS
Associate Principal



Ashley Ager, PG, MS
Principal

cc: Colton Brown, XTO
Kaylan Dirkx, XTO
New Mexico State Land Office
Bureau of Land Management

Appendices:

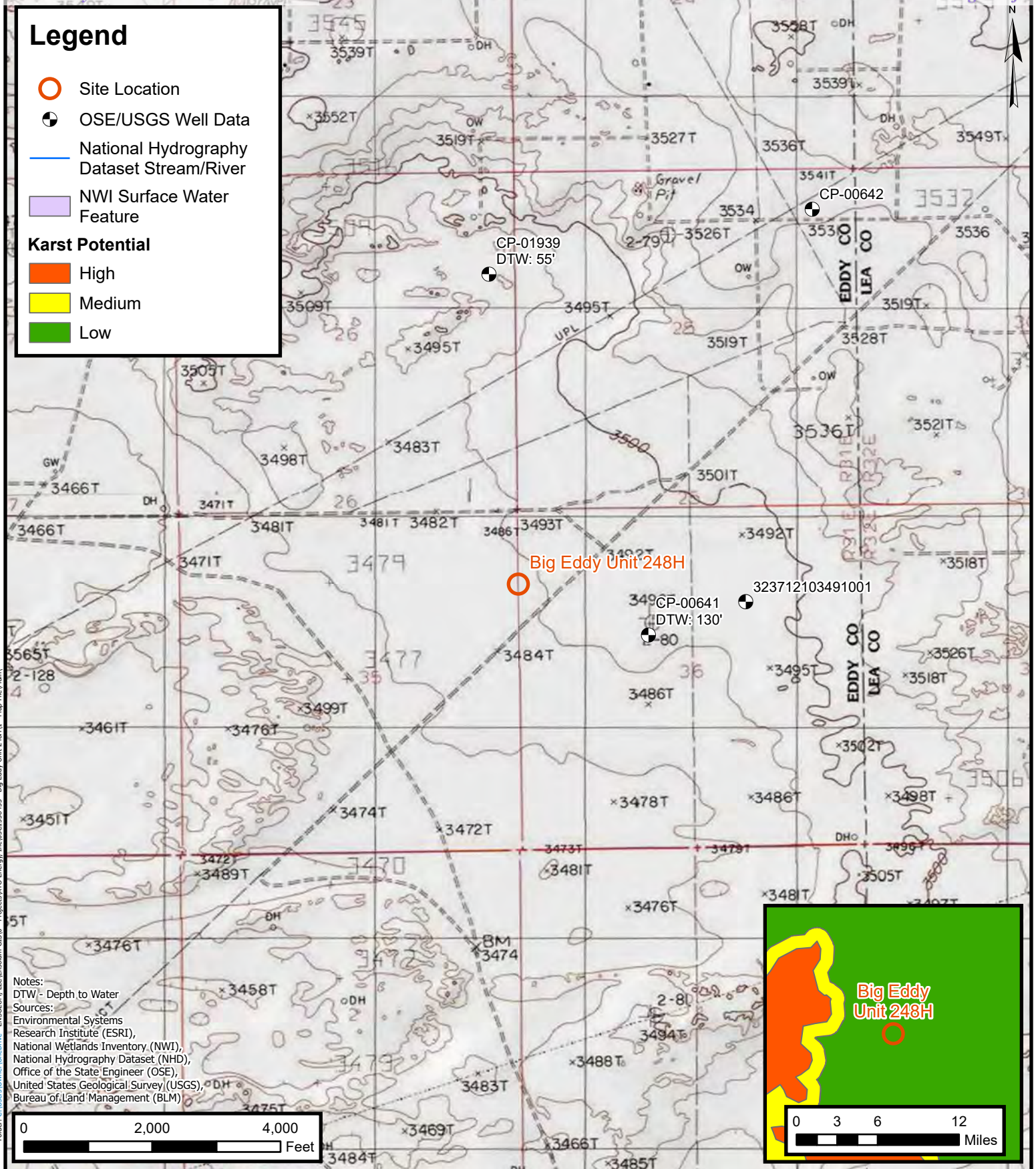
Figure 1	Site Location Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Vegetation Survey Transects
Figure 4	Proposed Excavation Extent
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Lithologic / Soil Sampling Logs
Appendix C	Photographic Log

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Appendix D Laboratory Analytical Reports & Chain-of-Custody Documentation



FIGURES



Site Receptor Map

XTO Energy, Inc
Big Eddy Unit 248H
Incident Number: NAPP2418043567
Unit A, Sec 35, T19S, R31E
Eddy County, New Mexico

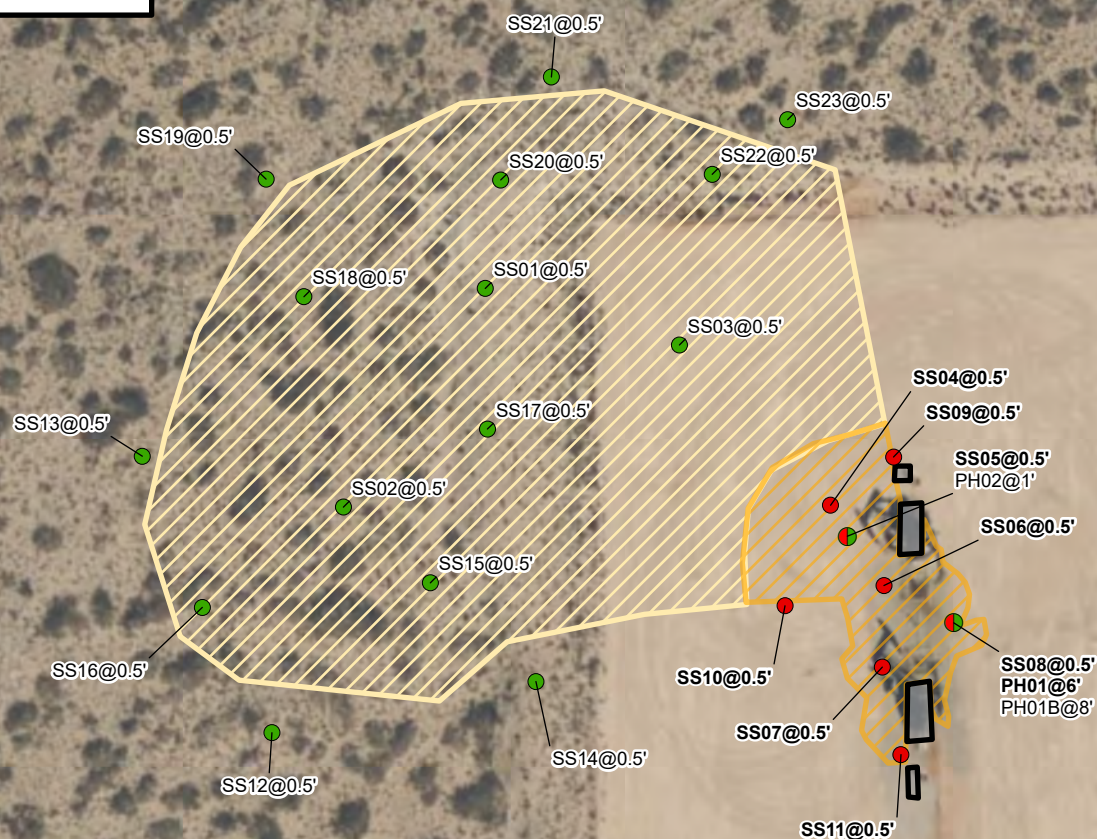
FIGURE

1



Legend

- Delineation Soil Sample in Compliance with Closure Criteria
- Delineation Soil Sample with Concentrations Previously Exceeding Closure Criteria
- Delineation Soil Sample with Concentrations Exceeding Closure Criteria
- Production Equipment
- Release Extent
- Area of Investigation



Notes:
Sample ID @ Depth Below Ground Surface.

0 25 50 100 150 200
Feet

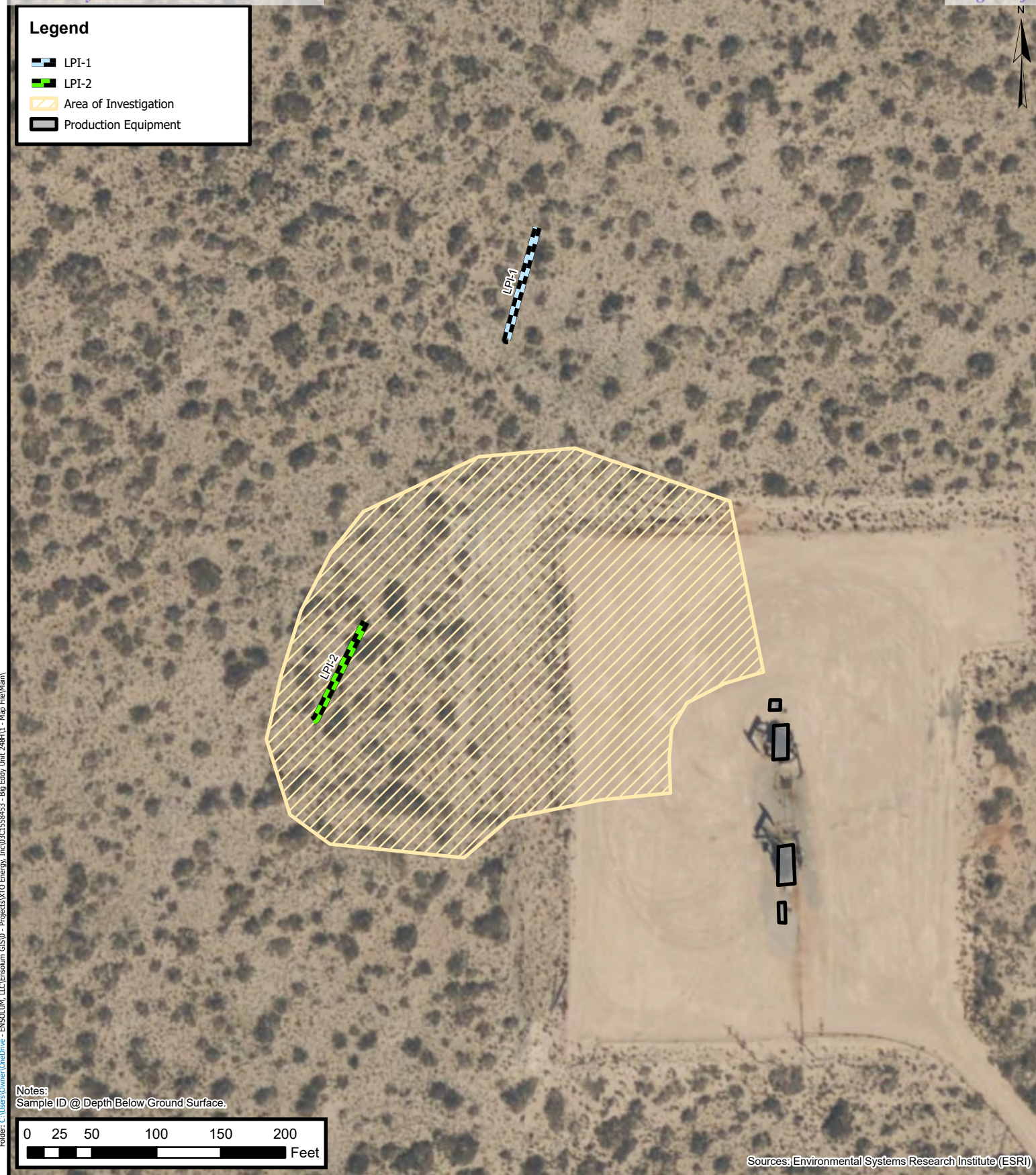
Sources: Environmental Systems Research Institute (ESRI)





Delineation Soil Sample Locations

XTO Energy, Inc
Big Eddy Unit 248H
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Unit A, Sec 35, T19S, R31E
Eddy County, New Mexico

FIGURE
2

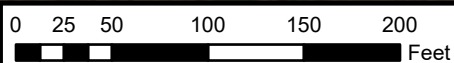


Legend

-  Production Equipment
-  Proposed Excavation Extent



Notes:
Sample ID @ Depth Below Ground Surface.



Sources: Environmental Systems Research Institute (ESRI)



Proposed Excavation Extent

XTO Energy, Inc
Big Eddy Unit 248H
Incident Number: NAPP2418043567
Unit A, Sec 35, T19S, R31E
Eddy County, New Mexico

FIGURE

4



TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 Big Eddy Unit 248H
 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)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Delineation Soil Samples										
SS01	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS02	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS03	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
SS04	07/29/2024	0.5	<0.050	<0.300	<10.0	182	55.3	182	237	560
SS05	07/29/2024	0.5	<0.050	<0.300	<10.0	1,870	465	1,870	2,335	1,650
PH02	09/09/2024	1	<0.050	<0.300	<10.0	87.4	13.3	87.4	101	192
SS06	07/29/2024	0.5	<0.050	5.16	75.7	2,710	613	2,786	3,399	1,250
SS07	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	640
SS08	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	13,600
PH01	09/09/2024	6	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	752
PH01B	09/09/2024	8	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS09	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,060
SS10	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,570
SS11	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,060
SS12	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS13	07/29/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS14	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS15	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS16	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS17	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS18	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS19	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 Big Eddy Unit 248H
 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)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
SS20	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS21	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS22	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS23	09/17/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD 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

Revised June 1972

STATE ENGINEER OFFICE
WELL RECORD

SANTA FE

Section 1. GENERAL INFORMATION

(A) Owner of well Phillips Petroleum Owner's Well No. CP-641-Expl.
Street or Post Office Address P.O. Box 2130
City and State Hobbs, NM 88240

Well was drilled under Permit No. TEST HOLE FOR EPA and is located in the: #4 1600' FNL 1600' FWL
a. 1/4 1/4 SE 1/4 NW 1/4 of Section 36 Township 19S Range 31E N.M.P.M.
b. Tract No. _____ of Map No. _____ of the _____
c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in Eddy County.
d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor Larry's Drilling License No. WD882
Address 2601 W. Bender Hobbs, NM 88240
Drilling Began 2-11-82 Completed 2-12-82 Type tools trl-cone 0-220'-7 7/8
220 Size hole 4 3/4
Elevation of land surface or _____ at well is _____ ft. Total depth of well 300 ft.
Completed well is ☐ shallow ☐ artesian test hole Depth to water upon completion of well 130 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
<u>5 1/2</u>	<u>160PVC</u>		<u>0</u>	<u>220</u>				

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method _____
Date Well Plugged _____
Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received February 23, 1982 Quad _____ FWL _____ FSL _____
File No. CP-641-Exploratory Use EXP. Location No. 19.31.36.14114

Section 7. REMARKS AND ADDITIONAL INFORMATION

STUDIES IN


Larry Jenkins
Driller *Jay*


Released to Imaging: 11/6/2024 10:50:23 AM



APPENDIX B

Lithologic Soil Sampling Logs

		Sample Name: PH01		Date: 9/9/2024				
		Site Name: Big Eddy Unit 248H						
		Incident Number: NAPP2418043567						
		Job Number: 03C1558453						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.620931, -103.831294			Logged By: JD		Method: Backhoe			
			Hole Diameter: 24"		Total Depth: 8'			
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. A 40% correction factor is included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	12,611	0.0	N	SS08	0.5	0	CCHE	(0-8') CALICHE, tan, fine grained, some sand, well sorted, no odor
						1		
						2		
						3		
						4		Soil excavated to 4' bgs between 9/4/24 and 9/9/2024
						5		
D	929.6	0.0		PH01	6	6		
D	1,495	0.0				7		
D	<162	0.0		PH01A	8	8		
						Total Depth @ 8 feet bgs		

								Sample Name: PH02		Date: 9/9/2024	
								Site Name: Big Eddy Unit 248H			
								Incident Number: NAPP2418043567			
								Job Number: 03C1558453			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: JD		Method: Backhoe	
Coordinates: 32.621056, -103.831474								Hole Diameter: 24"		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. A 40% correction factor is included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
D	1,609	24.8	Y	SS05	0.5	0	CCHE	(0-1') CALICHE, tan, fine grained, some sand, well sorted, odor			
D	201.6	0.0	N	PH02	1	1		(@1') no odor			
Total Depth @ 1-foot bgs											



APPENDIX C

Photographic Log

**Photographic Log**

XTO Energy, Inc
Big Eddy Unit 248H
NAPP2418043567



Photograph: 1 Date: 6/21/2024
Description: Recovery of free standing fluids
View: Northwest



Photograph: 2 Date: 7/12/2024
Description: Soil staining in release footprint
View: Northwest



Photograph: 3 Date: 7/12/2024
Description: Area of investigation
View: Southeast



Photograph: 4 Date: 9/9/2024
Description: Delineation and excavation activities
View: South

**Photographic Log**

XTO Energy, Inc
Big Eddy Unit 248H
NAPP2418043567



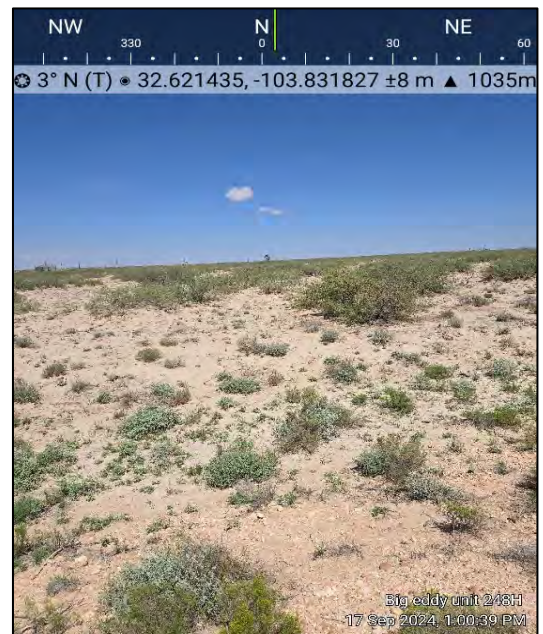
Photograph: 5 Date: 9/13/2024
Description: LPI -1 in undisturbed area
View: North



Photograph: 6 Date: 9/13/2024
Description: LPI -2 in area of investigation
View: Northeast



Photograph: 7 Date: 9/13/2024
Description: LPI -2 in area of investigation
View: Southwest



Photograph: 8 Date: 9/17/2024
Description: View of area of investigation from pad edge
View: North



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



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

August 02, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 248H

Enclosed are the results of analyses for samples received by the laboratory on 07/30/24 14:25.

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 01 .5' (H244536-01)

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	07/31/2024	ND	1.96	98.2	2.00	5.95	
Toluene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	5.60	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.15	107	2.00	5.41	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.59	110	6.00	5.45	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/01/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	08/01/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	08/01/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 02 .5' (H244536-02)

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.96	98.2	2.00	5.95	
Toluene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	5.60	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.15	107	2.00	5.41	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.59	110	6.00	5.45	
Total BTX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/31/2024	ND	464	116	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	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 123 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 03 .5' (H244536-03)

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	07/31/2024	ND	1.96	98.2	2.00	5.95	
Toluene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	5.60	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.15	107	2.00	5.41	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.59	110	6.00	5.45	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	07/31/2024	ND	464	116	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	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 04 .5' (H244536-04)

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	07/31/2024	ND	1.96	98.2	2.00	5.95		
Toluene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	5.60		
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.15	107	2.00	5.41		
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.59	110	6.00	5.45		
Total BTEX	<0.300	0.300	07/31/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	560	16.0	07/31/2024	ND	464	116	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	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	182	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	55.3	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 129 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 05 .5' (H244536-05)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/01/2024	ND	1.96	98.2	2.00	5.95		
Toluene*	<0.050	0.050	08/01/2024	ND	2.08	104	2.00	5.60		
Ethylbenzene*	<0.050	0.050	08/01/2024	ND	2.15	107	2.00	5.41		
Total Xylenes*	<0.150	0.150	08/01/2024	ND	6.59	110	6.00	5.45		
Total BTEx	<0.300	0.300	08/01/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	1650	16.0	07/31/2024	ND	464	116	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	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	1870	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	465	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 127 % 48.2-134

Surrogate: 1-Chlorooctadecane 147 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 06 .5' (H244536-06)

BTX 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/01/2024	ND	1.96	98.2	2.00	5.95	
Toluene*	0.384	0.050	08/01/2024	ND	2.08	104	2.00	5.60	
Ethylbenzene*	1.52	0.050	08/01/2024	ND	2.15	107	2.00	5.41	
Total Xylenes*	3.26	0.150	08/01/2024	ND	6.59	110	6.00	5.45	
Total BTX	5.16	0.300	08/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 153 % 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	1250	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	75.7	10.0	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	2710	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	613	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 131 % 48.2-134

Surrogate: 1-Chlorooctadecane 153 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 07 .5' (H244536-07)

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	07/31/2024	ND	1.96	98.2	2.00	5.95		
Toluene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	5.60		
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.15	107	2.00	5.41		
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.59	110	6.00	5.45		
Total BTEx	<0.300	0.300	07/31/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	640	16.0	07/31/2024	ND	464	116	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	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 100 % 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
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 08 .5' (H244536-08)

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	07/31/2024	ND	2.00	100	2.00	8.77		
Toluene*	<0.050	0.050	07/31/2024	ND	1.97	98.4	2.00	9.42		
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	9.88		
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.11	102	6.00	9.73		
Total BTEX	<0.300	0.300	07/31/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 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	13600	16.0	07/31/2024	ND	464	116	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	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 93.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 09 .5' (H244536-09)

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	07/31/2024	ND	2.00	100	2.00	8.77	
Toluene*	<0.050	0.050	07/31/2024	ND	1.97	98.4	2.00	9.42	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	9.88	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.11	102	6.00	9.73	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 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	1060	16.0	08/01/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 75.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 10 .5' (H244536-10)

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	07/31/2024	ND	2.00	100	2.00	8.77		
Toluene*	<0.050	0.050	07/31/2024	ND	1.97	98.4	2.00	9.42		
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	9.88		
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.11	102	6.00	9.73		
Total BTEX	<0.300	0.300	07/31/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 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	1570	16.0	08/01/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 83.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 11 .5' (H244536-11)

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	07/31/2024	ND	2.00	100	2.00	8.77		
Toluene*	<0.050	0.050	07/31/2024	ND	1.97	98.4	2.00	9.42		
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	9.88		
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.11	102	6.00	9.73		
Total BTEX	<0.300	0.300	07/31/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 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	1060	16.0	08/01/2024	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 86.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 12 .5' (H244536-12)

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	07/31/2024	ND	2.00	100	2.00	8.77	
Toluene*	<0.050	0.050	07/31/2024	ND	1.97	98.4	2.00	9.42	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	9.88	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.11	102	6.00	9.73	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	08/01/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 120 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/30/2024
Reported: 08/02/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 07/29/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 13 .5' (H244536-13)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/31/2024	ND	2.00	100	2.00	8.77		
Toluene*	<0.050	0.050	07/31/2024	ND	1.97	98.4	2.00	9.42		
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	2.08	104	2.00	9.88		
Total Xylenes*	<0.150	0.150	07/31/2024	ND	6.11	102	6.00	9.73		
Total BTEx	<0.300	0.300	07/31/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	08/01/2024	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	187	93.7	200	4.47	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	184	91.9	200	4.69	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

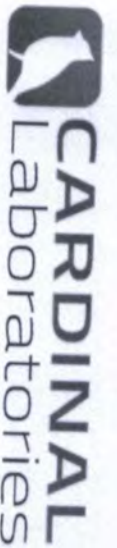
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to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

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

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC		BILL TO		ANALYSIS REQUEST	
Project Manager: David McInnis		P.O. #:			
Address: 3122 National Parks Hwy		Company: XTO Energy Inc.			
City: Carlsbad		Attn: Amy Ruth			
Phone #: 409-454-3009		Address: 3104 E. Greene St.			
Fax #:		City: Carlsbad			
Project #: 03C1558453		State: NM Zip: 88220			
Project Name: Big Eddy Unit 248H		Phone #:			
Project Location: 32.62087 -103.831415		Fax #:			
Sampler Name: Jesse Dorman					

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
1	5501	5'													
2	5502														
3	5503														
4	5504														
5	5505														
6	5506														
7	5507														
8	5508														
9	5509														
10	5510														

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Relinquished By: [Signature] Date: 7-30-24 Time: 14:25

Received By: [Signature] Date: 7-30-24 Time: 14:25

Delivered By: (Circle One) Observed Temp. °C 14.4 Sample Condition Intact CHECKED BY: [Signature] Turnaround Time: Standard Bacteria (only) Yes Sample Condition Observed Temp. °C 14.4

Sampler - UPS - Bus - Other: Observed Temp. °C 14.4 Sample Condition Intact CHECKED BY: [Signature] Turnaround Time: Standard Bacteria (only) Yes Sample Condition Observed Temp. °C 14.4

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

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

Released to Imaging: 11/6/2024 10:50:23 AM

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

September 17, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 248H

Enclosed are the results of analyses for samples received by the laboratory on 09/10/24 13:00.

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.

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



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

Analytical Results For:ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220Project: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:Reported:
17-Sep-24 15:23

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PH 01 6'	H245458-01	Soil	09-Sep-24 11:30	10-Sep-24 13:00
PH 01A 8'	H245458-02	Soil	09-Sep-24 12:05	10-Sep-24 13:00
FS 10 2'	H245458-03	Soil	09-Sep-24 13:50	10-Sep-24 13:00
FS 11 2'	H245458-04	Soil	09-Sep-24 13:55	10-Sep-24 13:00
FS 15 2'	H245458-05	Soil	09-Sep-24 14:10	10-Sep-24 13:00
PH 02 1'	H245458-06	Soil	09-Sep-24 15:10	10-Sep-24 13:00

09/17/24 - Client changed the sample IDs for -01, -02 and -06 (see COC). This is the revised report and will replace the one sent on 09/11/24.

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A handwritten signature in cursive script, appearing to read "Celey D. Keene".

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 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

PH 01 6'
H245458-01 (Soil)

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

Chloride	752		16.0	mg/kg	4	4091126	CT	11-Sep-24	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Toluene*	<0.050	0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	4091019	JH	10-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	105 %	71.5-134	4091019	JH	10-Sep-24	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
DRO >C10-C28*	<10.0	10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	

Surrogate: 1-Chlorooctane	97.1 %	48.2-134	4091016	MS	10-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane	115 %	49.1-148	4091016	MS	10-Sep-24	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

PH 01A 8'
H245458-02 (Soil)

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

Chloride	48.0		16.0	mg/kg	4	4091126	CT	11-Sep-24	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			106 %	71.5-134		4091019	JH	10-Sep-24	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
Surrogate: 1-Chlorooctane			97.7 %	48.2-134		4091016	MS	10-Sep-24	8015B	
Surrogate: 1-Chlorooctadecane			115 %	49.1-148		4091016	MS	10-Sep-24	8015B	

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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 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

FS 10 2'
H245458-03 (Soil)

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

Chloride	80.0		16.0	mg/kg	4	4091126	CT	11-Sep-24	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091019	JH	10-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134 4091019 JH 10-Sep-24 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	

Surrogate: 1-Chlorooctane 100 % 48.2-134 4091016 MS 10-Sep-24 8015B

Surrogate: 1-Chlorooctadecane 120 % 49.1-148 4091016 MS 10-Sep-24 8015B

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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 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

FS 11 2'
H245458-04 (Soil)

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

Chloride	144		16.0	mg/kg	4	4091126	CT	11-Sep-24	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091019	JH	10-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)		105 %		71.5-134		4091019	JH	10-Sep-24	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	

Surrogate: 1-Chlorooctane		96.4 %		48.2-134		4091016	MS	10-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane		111 %		49.1-148		4091016	MS	10-Sep-24	8015B	
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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 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

FS 15 2'
H245458-05 (Soil)

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

Chloride	144		16.0	mg/kg	4	4091126	CT	11-Sep-24	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Toluene*	<0.050	0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	4091019	JH	10-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	107 %	71.5-134	4091019	JH	10-Sep-24	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
DRO >C10-C28*	<10.0	10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	

Surrogate: 1-Chlorooctane	97.8 %	48.2-134	4091016	MS	10-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane	113 %	49.1-148	4091016	MS	10-Sep-24	8015B	
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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 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

PH 02 1'
H245458-06 (Soil)

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

Chloride	192		16.0	mg/kg	4	4091126	CT	11-Sep-24	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091019	JH	10-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091019	JH	10-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			107 %		71.5-134	4091019	JH	10-Sep-24	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
DRO >C10-C28*	87.4		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	
EXT DRO >C28-C36	13.3		10.0	mg/kg	1	4091016	MS	10-Sep-24	8015B	

Surrogate: 1-Chlorooctane			94.3 %		48.2-134	4091016	MS	10-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			111 %		49.1-148	4091016	MS	10-Sep-24	8015B	
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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 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 4091126 - 1:4 DI Water									
Blank (4091126-BLK1)					Prepared & Analyzed: 11-Sep-24				
Chloride	ND	16.0	mg/kg						
LCS (4091126-BS1)					Prepared & Analyzed: 11-Sep-24				
Chloride	400	16.0	mg/kg	400		100	80-120		
LCS Dup (4091126-BSD1)					Prepared & Analyzed: 11-Sep-24				
Chloride	416	16.0	mg/kg	400		104	80-120	3.92	20

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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

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 4091019 - Volatiles**Blank (4091019-BLK1)**

Prepared & Analyzed: 10-Sep-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)	0.0517		mg/kg	0.0500		103	71.5-134			

LCS (4091019-BS1)

Prepared & Analyzed: 10-Sep-24

Benzene	2.05	0.050	mg/kg	2.00		102	82.8-130			
Toluene	2.08	0.050	mg/kg	2.00		104	86-128			
Ethylbenzene	2.07	0.050	mg/kg	2.00		103	85.9-128			
m,p-Xylene	4.42	0.100	mg/kg	4.00		110	89-129			
o-Xylene	2.11	0.050	mg/kg	2.00		105	86.1-125			
Total Xylenes	6.52	0.150	mg/kg	6.00		109	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0501		mg/kg	0.0500		100	71.5-134			

LCS Dup (4091019-BSD1)

Prepared & Analyzed: 10-Sep-24

Benzene	1.81	0.050	mg/kg	2.00		90.3	82.8-130	12.5	15.8	
Toluene	1.84	0.050	mg/kg	2.00		92.0	86-128	12.4	15.9	
Ethylbenzene	1.82	0.050	mg/kg	2.00		90.9	85.9-128	12.9	16	
m,p-Xylene	3.91	0.100	mg/kg	4.00		97.7	89-129	12.2	16.2	
o-Xylene	1.85	0.050	mg/kg	2.00		92.5	86.1-125	12.9	16.7	
Total Xylenes	5.76	0.150	mg/kg	6.00		96.0	88.2-128	12.4	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0504		mg/kg	0.0500		101	71.5-134			

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Manager: DAVID MCINNIS
Fax To:

Reported:
17-Sep-24 15:23

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4091016 - General Prep - Organics**Blank (4091016-BLK1)**

Prepared & Analyzed: 10-Sep-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	46.2		mg/kg	50.0		92.5	48.2-134			
Surrogate: 1-Chlorooctadecane	53.1		mg/kg	50.0		106	49.1-148			

LCS (4091016-BS1)

Prepared & Analyzed: 10-Sep-24

GRO C6-C10	204	10.0	mg/kg	200		102	66.4-123			
DRO >C10-C28	199	10.0	mg/kg	200		99.4	66.5-118			
Total TPH C6-C28	403	10.0	mg/kg	400		101	77.6-123			
Surrogate: 1-Chlorooctane	51.1		mg/kg	50.0		102	48.2-134			
Surrogate: 1-Chlorooctadecane	55.0		mg/kg	50.0		110	49.1-148			

LCS Dup (4091016-BS1)

Prepared & Analyzed: 10-Sep-24

GRO C6-C10	210	10.0	mg/kg	200		105	66.4-123	3.00	17.7	
DRO >C10-C28	209	10.0	mg/kg	200		104	66.5-118	4.92	21	
Total TPH C6-C28	419	10.0	mg/kg	400		105	77.6-123	3.95	18.5	
Surrogate: 1-Chlorooctane	54.7		mg/kg	50.0		109	48.2-134			
Surrogate: 1-Chlorooctadecane	58.9		mg/kg	50.0		118	49.1-148			

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

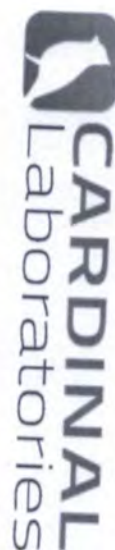
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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Ensolum, LLC		P.O. #:		BILL TO		ANALYSIS REQUEST									
Project Manager: David McInnis															
Address: 3122 National Parks Hwy															
City: Carlsbad		Company: XTO Energy Inc.													
Phone #: 409-454-3009		Attn: Amy Ruth													
Project #: 03C1558453		Fax #:													
Project Name: Big Eddy Unit 248H		Address: 3104 E. Green St.													
Project Location: 32.62087, -103.83145		City: Carlsbad													
Sampler Name: Jesse Dorman		State: NM Zip: 88220													
		Phone #:													
		Fax #:													
FOR LAB USE ONLY															

FOR LAB USE ONLY

[illegible]

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Relinquished By: _____ **Received By:** _____

Date: _____

Date: <u>4-10-24</u>		Received By: _____	
Time: <u>1300</u>		_____	
Date: _____		Received By: _____	
Time: _____		_____	
Delivered By: (Circle One)		Observed Temp. °C <u>9.3</u>	
Sampler - UPS - Bus - Other:		Corrected Temp. °C <u>0.12</u>	
Sample Condition Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		CHECKED BY: _____	
Turnaround Time: _____		Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Thermometer ID # <u>1113</u>		Bacteria (only) <input checked="" type="checkbox"/>	
Correction Factor <u>0.0</u>		Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/>	
_____		Yes <input type="checkbox"/> No <input type="checkbox"/>	
_____		Observed Temp. °C _____	
_____		Corrected Temp. °C _____	
Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: _____ All Results are emailed. Please Email address: <u>Dlmcinis@ensolum.com</u> REMARKS: <u>*Customer Requested ID Check</u> Cost Center: <u>1140201001</u> Incident ID: <u>NAFP2418043567</u>			

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



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

September 18, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: BIG EDDY UNIT 248H

Enclosed are the results of analyses for samples received by the laboratory on 09/17/24 14:11.

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 14 .5' (H245642-01)

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21	
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10	
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29	
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13	
Total BTX	<0.300	0.300	09/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	16.0	16.0	09/18/2024	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/17/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/17/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/17/2024	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 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
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 15 .5' (H245642-02)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21		
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10		
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29		
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13		
Total BTEx	<0.300	0.300	09/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/17/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/17/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/17/2024	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 16 .5' (H245642-03)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21		
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10		
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29		
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13		
Total BTEx	<0.300	0.300	09/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/17/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/17/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/17/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 17 .5' (H245642-04)

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21	
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10	
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29	
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13	
Total BTEX	<0.300	0.300	09/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/17/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/17/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/17/2024	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 18 .5' (H245642-05)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21		
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10		
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29		
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13		
Total BTEx	<0.300	0.300	09/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/17/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/17/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/17/2024	ND					

Surrogate: 1-Chlorooctane 108 % 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
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 19 .5' (H245642-06)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21		
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10		
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29		
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13		
Total BTEx	<0.300	0.300	09/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/17/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/17/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/17/2024	ND					

Surrogate: 1-Chlorooctane 105 % 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
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 20 .5' (H245642-07)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21		
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10		
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29		
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13		
Total BTEx	<0.300	0.300	09/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/17/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/17/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/17/2024	ND					

Surrogate: 1-Chlorooctane 99.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 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
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 21 .5' (H245642-08)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21		
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10		
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29		
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13		
Total BTEx	<0.300	0.300	09/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/17/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/17/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/17/2024	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 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
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 22 .5' (H245642-09)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21		
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10		
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29		
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13		
Total BTEx	<0.300	0.300	09/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/18/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/18/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/18/2024	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
DAVID MCINNIS
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 09/17/2024
Reported: 09/18/2024
Project Name: BIG EDDY UNIT 248H
Project Number: 03C1558453
Project Location: XTO 32.62087 -103.83145

Sampling Date: 09/17/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SS 23 .5' (H245642-10)

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2024	ND	2.11	105	2.00	6.21		
Toluene*	<0.050	0.050	09/17/2024	ND	2.13	107	2.00	6.10		
Ethylbenzene*	<0.050	0.050	09/17/2024	ND	2.12	106	2.00	6.29		
Total Xylenes*	<0.150	0.150	09/17/2024	ND	6.53	109	6.00	6.13		
Total BTX	<0.300	0.300	09/17/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/18/2024	ND	416	104	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/18/2024	ND	201	101	200	2.40	
DRO >C10-C28*	<10.0	10.0	09/18/2024	ND	203	102	200	1.95	
EXT DRO >C28-C36	<10.0	10.0	09/18/2024	ND					

Surrogate: 1-Chlorooctane 116 % 48.2-134

Surrogate: 1-Chlorooctadecane 124 % 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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A handwritten signature in black ink, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

BILL TO

ANALYSIS REQUEST

Company Name: Ensolum, LLC		P.O. #:		
Project Manager: David Mcinnis		Company: XTO Energy Inc.		
Address: 3122 National Parks Hwy		Attn: Amy Ruth		
City: Carlsbad	State: NM Zip: 88220	Address: 3104 E. Green St.		
Phone #: 409-454-3009	Fax #:	City: Carlsbad		
Project #: 03C1558453	Project Owner: XTO	State: NM Zip: 88220		
Project Name: Big Eddy Unit 248H	Phone #:			
Project Location: 32.62087, -103.83145	Fax #:			
Sampler Name: Jesse Dorman				

FOR LAB USE ONLY		Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST			
Lab I.D.	Sample I.D.				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			BTEX	TPH	CHLORIDE	
HAUSCUB	5514	15	6	1							9/17/24	1130				
	5515	15	6	1								1133				
	5516	15	6	1								1136				
	5517	15	6	1								1141				
	5518	15	6	1								1144				
	5519	15	6	1								1148				
	5520	15	6	1								1152				
	5521	15	6	1								1155				
	5522	15	6	1								1158				
	5523	15	6	1								1159				

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Relinquished By:	Date: 9/17/24	Received By:	Date: 9/17/24
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Relinquished By:	Date: 9/17/24	Received By:	Date: 9/17/24
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Delivered By: (Circle One)	Observed Temp.: °C	Sample Condition	CHECKED BY:	Turnaround Time:	Standard	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp.: °C	Cool Intact	(initials)	#40-0.00	Rush	Yes	Cool Intact
		Yes				No	Observed Temp.: °C
		No				No	Corrected Temp.: °C

+ Cardinal cannot accept verbal changes. Please email changes to cely.keene@cardinallabsnm.com

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Energy, Minerals and Natural Resources
Oil Conservation Division
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Santa Fe, NM 87505

QUESTIONS

Action 385328

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	385328
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2418043567
Incident Name	NAPP2418043567 BIG EDDY UNIT 248H @ 0
Incident Type	Release Other
Incident Status	Remediation Plan Received

Location of Release Source	
Please answer all the questions in this group.	
Site Name	Big Eddy Unit 248H
Date Release Discovered	06/21/2024
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Release Other
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 Well Crude Oil Released: 5 BBL Recovered: 2 BBL Lost: 3 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure Well Produced Water Released: 9 BBL Recovered: 3 BBL Lost: 6 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 385328

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	385328
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

QUESTIONS

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

Initial Response

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

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

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

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

I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 09/20/2024
--	--

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QUESTIONS, Page 3

Action 385328

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	385328
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

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	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 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	Greater than 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	Yes

Remediation Plan

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

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

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

Chloride	(EPA 300.0 or SM4500 Cl B)	13600
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	3399
GRO+DRO	(EPA SW-846 Method 8015M)	2786
BTEX	(EPA SW-846 Method 8021B or 8260B)	5
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	07/29/2024
On what date will (or did) the final sampling or liner inspection occur	12/18/2024
On what date will (or was) the remediation complete(d)	12/28/2024
What is the estimated surface area (in square feet) that will be reclaimed	10700
What is the estimated volume (in cubic yards) that will be reclaimed	1500
What is the estimated surface area (in square feet) that will be remediated	10700
What is the estimated volume (in cubic yards) that will be remediated	1500

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

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

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QUESTIONS, Page 4

Action 385328

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	385328
	Action Type:	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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 off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

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: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 09/20/2024
--	--

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

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QUESTIONS, Page 5

Action 385328

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 385328
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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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QUESTIONS, Page 6

Action 385328

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	385328
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	380556
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	09/09/2024
What was the (estimated) number of samples that were to be gathered	65
What was the sampling surface area in square feet	13000

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	No
--	----

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

CONDITIONS

Action 385328

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	385328
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

CONDITIONS

Created By	Condition	Condition Date
rhamlet	The Remediation Plan is Conditionally Approved. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards from Table 1 of the OCD Spill Rule for site assessment/characterization/proven depth to water determination. Sidewall/Edge samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. The release area will need confirmation floor/sidewall samples representing no more than 200 ft2. All sidewall samples should be taken from the sidewall of the excavation. Please make sure that the edge of the release extent is accurately defined. Confirmation samples will need to be conducted at surface and at 0.5 feet in the "Area of Investigation" to ensure that contaminants didn't get carried/deposited in this area. All off-pad areas must meet reclamation/revegetation standards set forth in the OCD Spill Rule.	11/6/2024