ENSOLUM

January 17, 2025

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

Re: Closure Request
PLU 20 BD West Battery
Incident Number nAPP2432726566
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request* to document assessment, delineation, and soil sampling activities at the PLU 20 BD West Battery (Site). The purpose of the assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a produced water release onto the pad surface. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this *Closure Request*, describing assessment and delineation activities that have occurred and requesting no further action for Incident Number nAPP2432726566.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in in Unit N, Section 20, Township 25 South, Range 30 East, in Eddy County, New Mexico (32.11149°, -103.90729°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On October 20, 2024, a water dump line corroded resulting in the release of approximately 5 barrels (bbls) of produced water onto the surface of the pad, and around active production equipment and surface pipelines. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; all released fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) via Notification of Release (NOR) and an Initial C-141 Application (C-141) on November 22, 2024. The release was assigned Incident Number nAPP2432726566.

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 nearby groundwater data from a soil boring drilled to investigate regional groundwater depth. In February 2020, a soil boring permitted by New Mexico Office of the State Engineer (C-4394) was completed approximately 0.47 miles west of the Site utilizing sonic drilling method. Soil boring C-4394 was drilled to a depth of 110 feet bgs. A field geologist logged and described soils continuously. No

moisture or groundwater was encountered during drilling activities. The temporary well was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 110 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. The Well Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a seasonal dry wash, located approximately 468 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). Site receptors are identified on Figure 1.

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

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

SITE ASSESSMENT ACTIVITIES

On December 11, 2024, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the C-141 and visual observations. The release extent was mapped utilizing a handheld Global Positioning System (GPS) unit and is depicted on Figure 2. Photographic documentation was collected during the Site assessment and Photographic Log is included in Appendix B.

DELINEATION AND CONFIRMATION SOIL SAMPLING ACTIVITIES

On January 8, 2025, Ensolum returned to the Site to conduct delineation activities to determine the presence or absence of impacted soil. Four delineation boreholes (BH01, SS01/SS01A, SS02/SS02A, and SS04/SS04A) were advanced to a total depth of 2 feet bgs to assess the vertical extent of the release. Discrete soil samples were collected from the boreholes at depths of 0.5 feet and 2 feet bgs. One delineation soil sample (SS03) was collected south of the release, immediately adjacent to production equipment. Delineation soil sample SS03 was unable to be advanced to 2 feet bgs due to multiple active surface and sub-surface pipelines in the area. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. Field screening results and observations for the boreholes were logged on lithologic soil sampling logs, which are included in Appendix C. The release extent and delineation soil sample locations are depicted on Figure 2. Photographic documentation is included in Appendix B.

Following delineation activities, surface scraping of the release area was completed to the maximum extent practicable (MEP). Due to active production equipment and surface pipelines limiting the use of

mechanical equipment, surface scraping activities were performed utilizing hand tools. Four 5-point composite confirmation soil samples (CS01 through CS04) were collected within the entire release extent area following surface scraping activities. The 5-point composite soil samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The confirmation soil sample locations are depicted in Figure 3.

All delineation and confirmation soil samples collected 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 contaminants of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following Standard Method SM4500.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for delineation soil samples SS01/SS01A, SS02/SS02A, SS03, and SS04/SS04A indicated all COCs were in compliance with the strictest Table I Closure Criteria, successfully defining the lateral extent of the release. Delineation soil sample BH01, collected at 0.5 feet bgs, indicated an elevated chloride concentration (9,400 mg/kg) but was compliant with Closure Criteria. Delineation borehole BH01A, collected at 2 feet bgs, indicated all COCs were in compliance with strictest Table I Closure Criteria, successfully defining the vertical extent of the release.

Laboratory analytical results for confirmation soil samples CS01 through CS04 indicated all confirmation soil samples were in compliance with the Site Closure Criteria. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included in Appendix D.

CLOSURE REQUEST

Site assessment, delineation, and excavation activities were conducted at the Site to address the October 2024 release of produced water. Laboratory analytical results for all confirmation soil samples, collected from the entire release extent area, indicated all COC concentrations were compliant with the Site Closure Criteria. Based on laboratory analytical results, no further remediation was required.

Due to the presence of active production equipment and surface pipelines located within the release extent area, approximately 49 cubic yards of waste-containing soil across an approximate area of 657 square feet, assuming a maximum depth of 2 feet bgs as indicated by soil sample BH01A, remain immediately adjacent to and underneath active production equipment and pipelines. The waste-containing soil is defined vertically by delineation soil sample BH01A, and laterally through SS01/SS01A, SS02/SS02A, SS03, and SS04/SS04A. Final reclamation of the soil exceeding the reclamation requirement in the top 4 feet will occur during the final abandonment of the well pad or major construction, whichever comes first.

Excavation of soil has mitigated impacts at this Site. Depth to groundwater has been estimated to be greater than 100 feet bgs and no sensitive receptors were identified near the release extent. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number nAPP2432726566.

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

Sincerely,
Ensolum, LLC

Tracy Hillard
Project Engineer

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

cc: Kaylan Dirkx, XTO
Colton Brown, XTO
Bureau of Land Management

Appendices:

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

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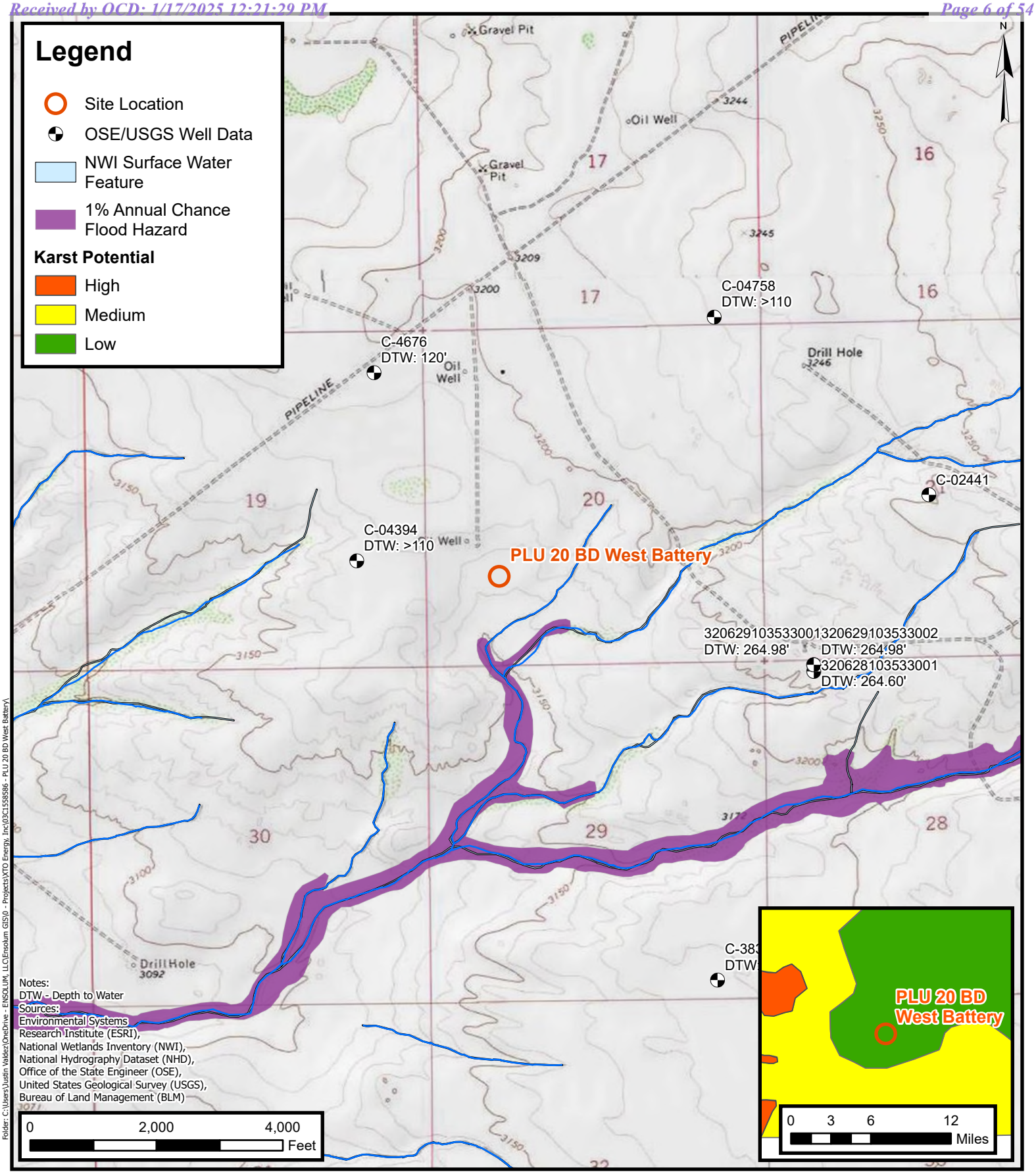
FIGURES



Folder: C:\Users\Justin Valdez\OneDrive - ENSOLUM, LLC\Ensolum GIS\0 - Projects\XTO Energy, Inc\03C1558586 - PLU 20 BD West Battery\

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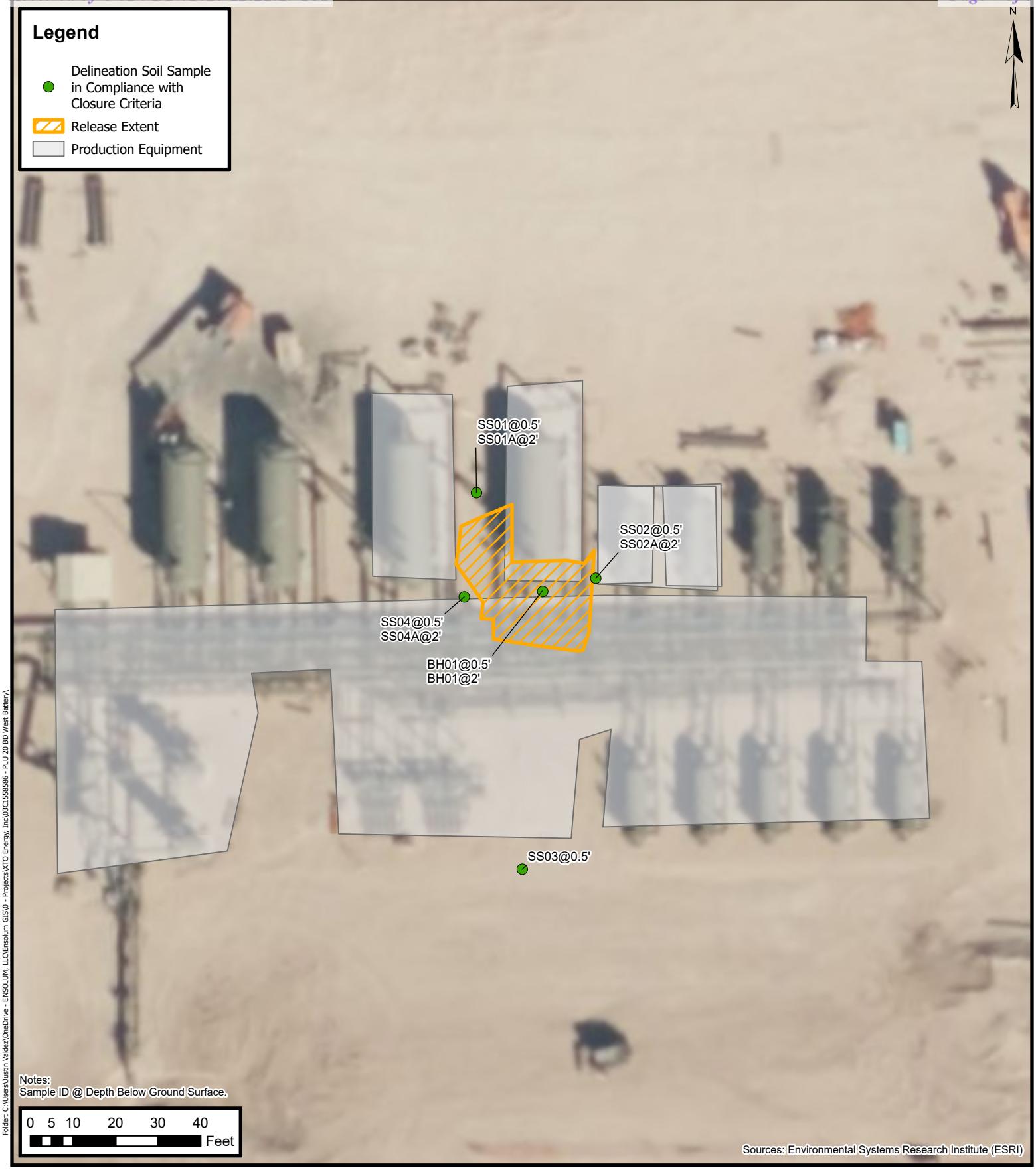
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

XTO Energy, Inc
PLU 20 BD West Battery
Incident Number: nAPP2432726566
Unit N, Section 20, T 25S, R 30E
Eddy County, New Mexico

FIGURE 1



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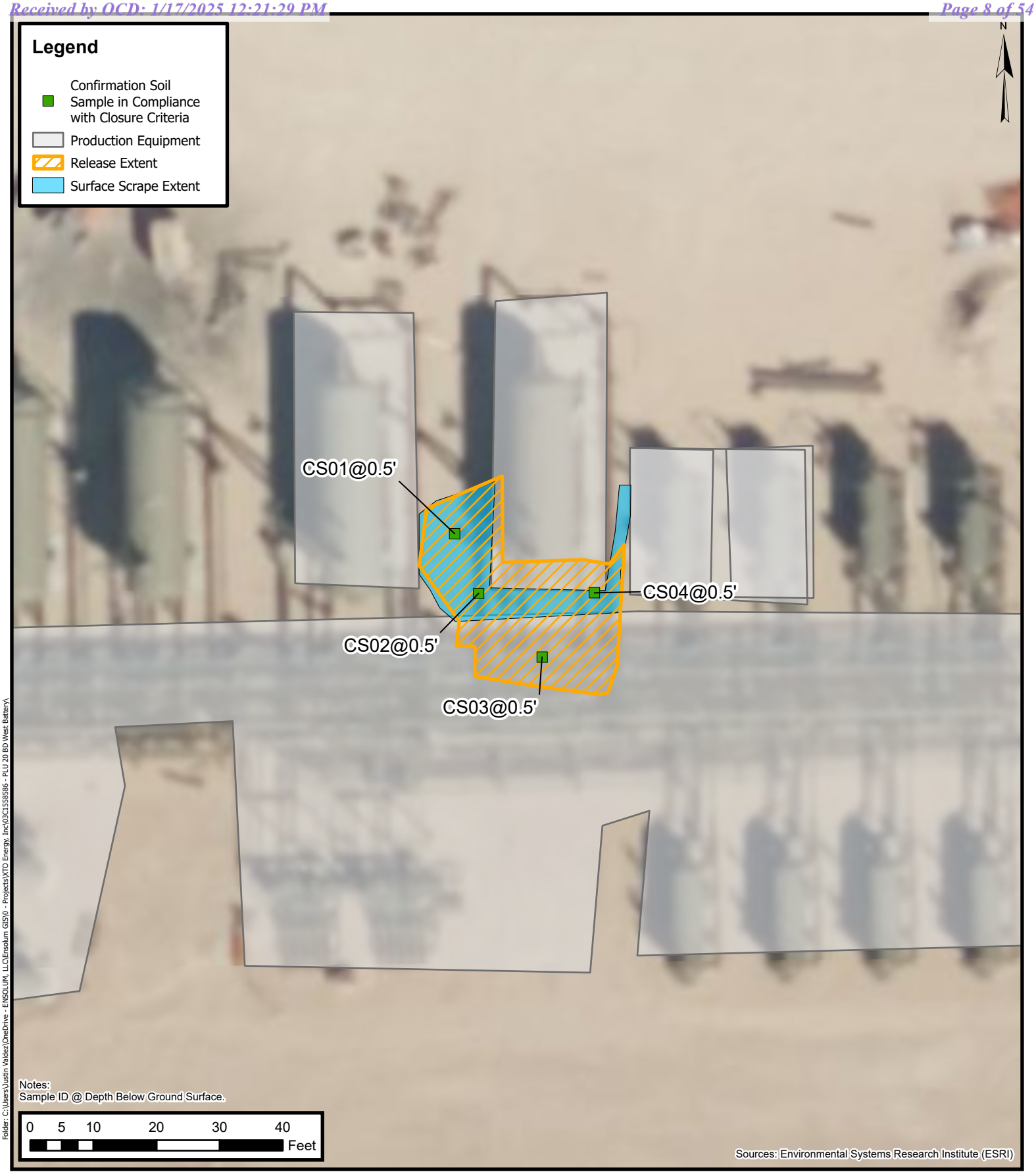
Delineation Soil Sample Locations

XTO Energy, Inc
PLU 20 BD West Battery
Incident Number: nAPP2432726566
Unit N, Section 20, T 25S, R 30E
Eddy County, New Mexico

FIGURE 2



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Confirmation Soil Sample Locations

XTO Energy, Inc
PLU 20 BD West Battery
Incident Number: nAPP2432726566
Unit N, Section 20, T 25S, R 30E
Eddy County, New Mexico

FIGURE 3

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU 20 BD West Battery
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	1,000	2,500	20,000
Delineation Soil Samples										
SS01	01/08/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	336
SS01A	01/08/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS02	01/08/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
SS02A	01/08/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
SS03	01/08/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
SS04	01/08/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	432
SS04A	01/08/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0
BH01	01/08/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	9,400
BH01A	01/08/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	464
Confirmation Soil Samples										
CS01	01/08/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	6,080
CS02	01/08/2025	0.5	<0.050	<0.300	<10.0	23.0	<10.0	23.0	23.0	9,120
CS03	01/08/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	9,840
CS04	01/08/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	7,040

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

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APPENDIX A

Referenced Well Records

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
MW01 C 4394	2/4/2020
Project Name:	**RP Number:**
PLU 423	2RP-3790
Logged By: FS	**Method:** SONIC
Hole Diameter: 4"/6"	**Total Depth:** 110'

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: ~~CHLORIDES, PID.~~

Comments: No sampling, lithology remarks only

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					1			hydrovac excavated (refusal @ 1')
					2			2.5' SAND, dry, well graded, coarse-fine grand, light brwn-tan, no stain, no odor
D			N		3		SW-S	
					4			5' few silty sand pockets, reddish brwn, no plas, non cohesive
D			N		5			
					6			
					7		SP	6' SAND, dry, poorly graded, light brwn-brwn, fine-very fine
D			N		8			
					9			7.5' some mod. consol ss light brwn-brwn, sub rounded
D			N		10		SW-S	
					11			10' abundant ss
					12			12' ss gravel? absent
					13		SP	16' abundant ss gravel (mod consol)
					14			19' abundant - some
D			N		15			21.5' sandstone, light brwn-tan, dry, mod well consolidated, abundant
					16			
D			N		17		SW-S	
D			N		18			23' sandstone chunks absent
					19			
					20			
					21			
D			N		22			
					23			
					24			
D			N		25			

2.5-4
9-12
10-11' color change tan-off white
13' back to light brwn-brwn

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
MW01 C 4394	2/4/2020
Project Name:	**RP Number:**
PLU 423	~~2RP-2674~~ 2RP-3790
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: FS / Method: SONIC
Lat/Long:	Field Screening: ~~CHLORIDES, PID~~ / Hole Diameter: 4"/6" / Total Depth: 110'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					26			27.5' SAND, dry, light brwn - tan, poorly graded, fine-very fine
D			N		27			
					28		SP	30' trace light ~~brwn - tan~~ grey - grey caliche pebbles (gravel), rounded
D			N		29			
					30			31' caliche pebbles absent
D			N		31			
					32			31.5' color change light brwn - reddish brwn
M			N		33			33-34' abundant ss chunks, mod consol
					34			
					35			35' ss chunks absent
M			N		36		SW-SM	36' some clay pockets, reddish brwn, few pebbles, rounded - subrounded, grey - light grey, few laminations w/ clay, caliche, dolomite?
					37			
M			N		38			42.5' clay laminations, trace, reddish brwn
					39			
M			N		40			44' color change, light brwn - tan, SILTY sand
					41			
M			N		42			44.5' some SILTY sand, predomin light brwn - tan, no plasticity, non cohesive, trace high plas clay nodules, reddish brwn
					43			
D			N		44			48.5' low plas clay band, orange (35-40 mm)
					45		SP-SM	49.5' faint yellow band, (15-20 mm)
D			N		46			
					47			
					48			
					49			
					50			

rig adding water

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
MW01 C 4394	2/4/2020
Project Name:	**RP Number:**
PLU 423	ZRP-3790
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: FS / Method: sonic
Lat/Long:	Field Screening: ~~CHLORIDES, PID~~ / Hole Diameter: 4"/6" / Total Depth: 110'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D			N		51		SP	51.5' trace, high plas clay nodules
					52			
					53			53-54' some silty ss, poorly consolidated
D			N		54			
					55			55.5' color change tan-grey band (30mm)
M			N		56			
					57	X		59.5' SILTY sand, light brwn-brwn, moist, no plas, non cohesive, no stain
M			N		58			
					59			
M			N		60		SM	62' more consolidated
					61			64' dark brwn color change, silty clay nodules
					62			
D			N		63		SM-S	66' pockets of silty clay brwn-green
M			N		64			
					65			68' low plas clay pockets some, few low plas clay laminations
					66			
M			N		67			
					68			71' SILTY sand, dry, no plas, non cohesive, light brwn-tan
M			N		69			
					70			74' trace caliche pebbles, light grey-grey
D			N		71		SM	
					72			
					73			
D			N		74			
					75			

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
MW01 C 4394	2/4/2020
Project Name:	**RP Number:**
PLU 423	2RP-3790
Logged By: FS, BB	**Method:** sonic
Lat/Long:	**Field Screening:** ~~CHLORIDES, PID~~
Hole Diameter: 6"/4"	**Total Depth:** 110'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
						76	SM	76.5' trace low plas clay nodules, reddish brwn
D			N			77		
						78		82' CLAYSTONE, moist, brwn-greenish grey, low plasticity, cohesive, no stain, no odor mod consolidated
D			N			79		
						80		
D			N			81		85' SILTY sand, dry, light brwn - brwn, no plas, non cohesive, no stain, no odor
						82	CL-S	
M			N			83		
						84		
						85	SM	87' color change tan - off white
D			N			86		88' light brwn - brwn
						87	SM-S	
D			N			88		87' SILTSTONE, dry, w/ clay pockets, low plas
						89		
D			N			90		
						91		91' abundant clay pockets
						92		94.5' band yellow low plas clay
D			N			93		
						94	SM	
D			N			95	CH	end@95' 2/4/2020
						96		2/5/20
M			N			97		95'-101 CLAY, moist, brown - dark brown, high plasticity, cohesive, some tan clay laminations, no stain, no odor.
M			N			98		
D			N			99		98'-99' tan fine grain sandstone stringer.
M			N			100		

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier:	Date:
MW0 C 4394	2/5/2020
Project Name:	**RP Number:**
PLU 423	2RP-3790
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: BP / Method: Sonic
Lat/Long: / Field Screening: CHLORIDES, PID.	Hole Diameter: 6"/4" / Total Depth: 110'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D			N		101–110		CH / SP-S / CH / TD@110	101'- 105' SANDSTONE, tan - light brown, dry, moderately consolidated, calcareous cemented, poorly graded, no stain, no odor. 105'- 110' CLAY, moist, dark brown - brown, high plasticity, cohesive, trace tan sand laminations, no stain, no odor. 107'- 109' tan - light brown well consolidated fine grain sandstone stringer. TD @ 110'
D			N					
D			N					
M			N					
D			N					
D			N					
M			N					

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APPENDIX B

Photographic Log

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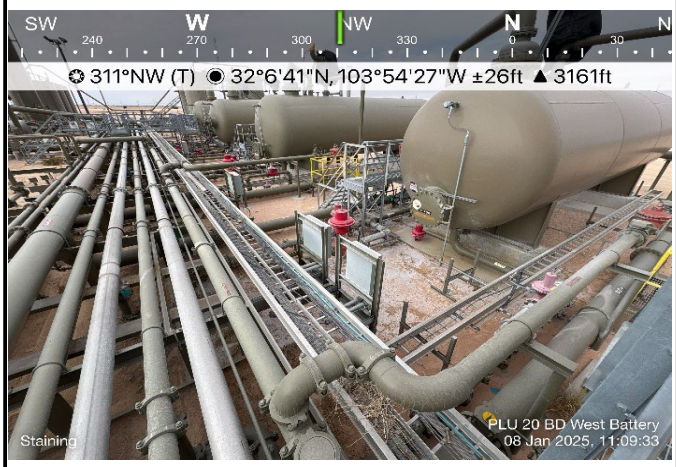
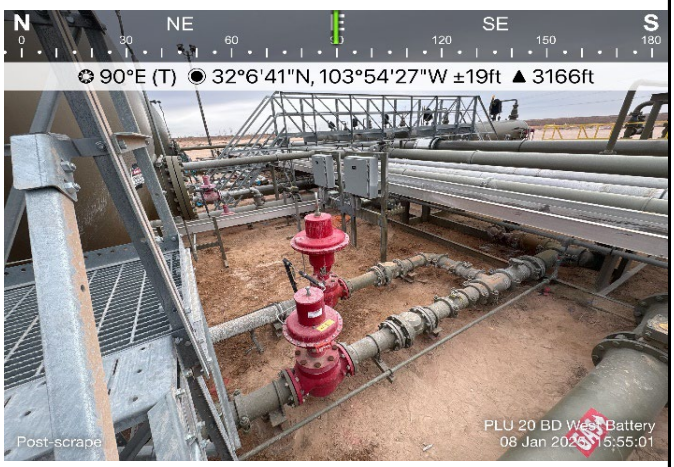
Photographic Log
XTO Energy, Inc
PLU 20 BD West Battery
nAPP2432726566

Photograph: 1 Date: 12/11/2024
Description: Assessment activities
View: Southeast



Photograph: 2 Date: 1/8/2025
Description: Delineation activities
View: Northwest



Photograph: 3 Date: 1/8/2025
Description: Surface scraping activities
View: East

Photograph: 4 Date: 1/8/2025
Description: Surface scraping activities
View: Northwest

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APPENDIX C

Lithologic Soil Sampling Logs

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	Sample Name: SS01	Date: 1/8/2025
	Site Name: PLU 20 BD West Battery	
	Incident Number: nAPP2432726566	
	Job Number: 03C1558586	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: US	Method: Hand Auger
Coordinates: 32.111588, -103.907728	Hole Diameter: 4"	Total Depth: 2 feet

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
						0	CCHE	(0-2') CALICHE, tan, poorly graded, no odor
D	414	0.0	N	SS01	0.5			
						1		
D	<162	1.1	N	SS01A	2	2		
						Total Depth @ 2 feet bgs		

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	Sample Name: SS02	Date: 1/8/2025
	Site Name: PLU 20 BD West Battery	
	Incident Number: nAPP2432726566	
	Job Number: 03C1558586	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: US	Method: Hand Auger
Coordinates: 32.111532, -103.907638	Hole Diameter: 4"	Total Depth: 2 feet

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
						0	CCHE	(0-2') CALICHE, tan, poorly graded, no odor
D	274	1.1	N	SS02	0.5			
						1		
D	274	0.2	N	SS02A	2	2		

Total Depth @ 2 feet bgs

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	Sample Name: SS04	Date: 1/8/2025
	Site Name: PLU 20 BD West Battery	
	Incident Number: nAPP2432726566	
	Job Number: 03C1558586	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: US	Method: Hand Auger
Coordinates: 32.111521, -103.907738	Hole Diameter: 4"	Total Depth: 2 feet

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
						0	CCHE	(0-2') CALICHE, tan, poorly graded, no odor
D	515	0.5	N	SS04	0.5			
						1		
D	<162	0.0	N	SS04A	2	2		
						Total Depth @ 2 feet bgs		

ENSOLUM

	Sample Name: BH01	Date: 1/8/2025
	Site Name: PLU 20 BD West Battery	
	Incident Number: nAPP2432726566	
	Job Number: 03C1558586	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: US	Method: Hand Auger
Coordinates: 32.111524, -103.907679	Hole Diameter: 4"	Total Depth: 2 feet

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
						0	CCHE	(0-2') CALICHE, tan, poorly graded, no odor
D	11,665	1.3	N	BH01	0.5			
D	1,842	1.4	N		1	1		
D	515	1.3	N	BH01A	2	2		
						Total Depth @ 2 feet bgs		

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

CARDINAL Laboratories

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

January 14, 2025

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU 20 BRUSHY DRAW WEST BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 01/13/25 11:56.

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 accreditated 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,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: BH 01 0.5' (H250130-01)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	QM-07
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	QM-07
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	QM-07
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	QM-07
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *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	**9400**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	178	88.8	200	3.15	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	173	86.3	200	5.83	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *97.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *87.0 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: BH 01 A 2' (H250130-02)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *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	**464**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	178	88.8	200	3.15	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	173	86.3	200	5.83	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *107 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *96.1 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories
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**
Project Manager: Tracy Hillard	**P.O. #:**
Address: 601 N Marienfeld Street, Suite 400	**Company:** XTO Energy, Inc
City: Midland **State:** TX **Zip:** 79701	**Attn:** Colton Brown
Phone #: 575-937-3906 **Fax #:**	**Address:** 3104 E Greene St
Project #: 03C1558586 **Project Owner:** XTO Energy	**City:** Carlsbad
Project Name: PLU 20 BD West Battery	**State:** NM **Zip:** 88220
Project Location: 32.11149, -103.90729	**Phone #:**
Sampler Name: Uriel Santillana	**Fax #:**

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL ✓	OTHER:	SAMPLING: DATE	TIME	TPH 8015	BTEX 8021	Chloride 4500
H250130 1	BH01	0.5'	G	1			X					X		1/8/25	1314	X	X	X
2	BH01A	~~1'~~ 2' *SR 1-14-25	G	1			X					X		1/8/25	1356	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [signature]	**Date:** 1-13-25 **Time:** 1181	**Received By:** [signature]	**Verbal Result:** ☐ Yes ☐ No **Add'l Phone #:**
Relinquished By:	**Date:** **Time:**	**Received By:**	**All Results are emailed. Please provide Email address:** usantillana@ensolum.com, [redacted], TMorrissey@ensolum.com, THillard@ensolum.com
			REMARKS: Incident Number: nAPP2432726566
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 4.3c Corrected Temp. °C 3.6c	**Sample Condition** Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	**CHECKED BY: (Initials)** [initials]

*sample depth correction per customer SRodrigue 1-14-25

Turnaround Time: Standard ☐ Rush ☒ 24 hr
Thermometer ID ~~#113~~ #140
Correction Factor ~~-0.5°C~~ -0.6C
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

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

CARDINAL Laboratories

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

January 14, 2025

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU 20 BRUSHY DRAW WEST BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 01/13/25 11:56.

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 accreditated 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,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: SS 01 0.5' (H250131-01)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *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	**336**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	178	88.8	200	3.15	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	173	86.3	200	5.83	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *91.3 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *82.4 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: SS 01 A 2' (H250131-02)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *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	**80.0**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	178	88.8	200	3.15	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	173	86.3	200	5.83	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *103 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *96.2 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: SS 02 0.5' (H250131-03)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *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	**240**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *95.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *101 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: SS 02 A 2' (H250131-04)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *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	**192**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *107 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *116 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: SS 03 0.5' (H250131-05)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *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	**144**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *103 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *108 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: SS 04 0.5' (H250131-06)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *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	**432**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *108 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *115 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.11149-103.90729		

Sample ID: SS 04 A 2' (H250131-07)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *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	**96.0**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *116 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *124 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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**
Project Manager: Tracy Hillard	**P.O. #:**
Address: 601 N Marienfeld Street, Suite 400	**Company:** XTO Energy, Inc
City: Midland **State:** TX **Zip:** 79701	**Attn:** Colton Brown
Phone #: 575-937-3906 **Fax #:**	**Address:** 3104 E Greene St
Project #: 03C1558586 **Project Owner:** XTO Energy	**City:** Carlsbad
Project Name: PLU 20 BD West Battery	**State:** NM **Zip:** 88220
Project Location: 32.11149, -103.90729	**Phone #:**
Sampler Name: Uriel Santillana	**Fax #:**

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	TPH 8015	BTEX 8021	Chloride 4500
H250131																		
1	SS01	0.5'	G	1			X					X		1/8/25	1503	X	X	X
2	SS01A	2'													1508			
3	SS02	0.5'													1525			
4	SS02A	2'													1530			
5	SS03	0.5'													1617			
6	SS04	0.5'													1510			
7	SS04A	2'													1514			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: U Santillana	**Date:** 1.13.25 **Time:** 1154	**Received By:** A Adams	**Verbal Result:** ☐ Yes ☐ No **Add'l Phone #:**
Relinquished By:	**Date:** **Time:**	**Received By:**	**All Results are emailed. Please provide Email address:** usantillana@ensolum.com, TMorrissey@ensolum.com, THillard@ensolum.com
			REMARKS: Incident Number: nAPP2432726566

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 4.2 Corrected Temp. °C 3.6	**Sample Condition** Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	**CHECKED BY: (Initials)** AD	**Turnaround Time:** Standard ☐ Rush ☒ 24 hr **Thermometer ID** #113 #140 **Correction Factor** -0.5°C -0.4

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

FORM-006 R 3.2 10/07/21

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

1.13.25

CARDINAL Laboratories

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

January 14, 2025

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU 20 BRUSHY DRAW WEST BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 01/13/25 11:56.

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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Tamara Oldaker
Project Location:	XTO 32.11149-103.90729		

Sample ID: CS 01 0.5' (H250132-01)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *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	**6080**	16.0	01/13/2025	ND	464	116	400	3.51	

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	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *117 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *129 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Tamara Oldaker
Project Location:	XTO 32.11149-103.90729		

Sample ID: CS 02 0.5' (H250132-02)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: KV

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**9120**	16.0	01/13/2025	ND	432	108	400	0.00	QM-07

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	**23.0**	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *101 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *110 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Tamara Oldaker
Project Location:	XTO 32.11149-103.90729		

Sample ID: CS 03 0.5' (H250132-03)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: KV

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**9840**	16.0	01/13/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *106 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *115 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
TRACY HILLARD
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	01/13/2025	Sampling Date:	01/08/2025
Reported:	01/14/2025	Sampling Type:	Soil
Project Name:	PLU 20 BRUSHY DRAW WEST BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558586	Sample Received By:	Tamara Oldaker
Project Location:	XTO 32.11149-103.90729		

Sample ID: CS 04 0.5' (H250132-04)

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	01/13/2025	ND	1.57	78.6	2.00	11.6	
Toluene*	<0.050	0.050	01/13/2025	ND	1.65	82.7	2.00	11.4	
Ethylbenzene*	<0.050	0.050	01/13/2025	ND	1.67	83.6	2.00	12.2	
Total Xylenes*	<0.150	0.150	01/13/2025	ND	5.14	85.6	6.00	11.9	
Total BTEX	<0.300	0.300	01/13/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: KV

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**7040**	16.0	01/13/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/13/2025	ND	166	83.0	200	2.75	
DRO >C10-C28*	<10.0	10.0	01/13/2025	ND	168	83.9	200	3.48	
EXT DRO >C28-C36	<10.0	10.0	01/13/2025	ND					

Surrogate: 1-Chlorooctane *108 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *117 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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**
Project Manager: Tracy Hillard	**P.O. #:**
Address: 601 N Marienfeld Street, Suite 400	**Company:** XTO Energy, Inc
City: Midland **State:** TX **Zip:** 79701	**Attn:** Colton Brown
Phone #: 575-937-3906 **Fax #:**	**Address:** 3104 E Greene St
Project #: 03C1558586 **Project Owner:** XTO Energy	**City:** Carlsbad
Project Name: PLU 20 BD West Battery	**State:** NM **Zip:** 88220
Project Location: 32.11149, -103.90729	**Phone #:**
Sampler Name: Uriel Santillana	**Fax #:**

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	TPH 8015	BTEX 8021	Chloride 4500
H25132																		
1	CS01	0.5'	C	1			X					X		1/8/25	1419	X	X	X
2	CS02	↓	↓	↓			↓					↓		↓	1421	↓	↓	↓
3	CS03														1422			
4	CS04														1425			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	**Date:** 1-13-25	**Received By:**	**Verbal Result:** ☐ Yes ☐ No **Add'l Phone #:**
	Time: 1154		**All Results are emailed. Please provide Email address:** usantillana@ensolum.com, TMorrissey@ensolum.com, THillard@ensolum.com
Relinquished By:	**Date:**	**Received By:**	**REMARKS:** Incident Number: nAPP2432726566
	Time:		

Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 4.2 / Corrected Temp. °C 3.6	**Sample Condition** Cool: ☑ Yes ☐ No Intact: ☐ Yes ☐ No	**CHECKED BY: (Initials)**	**Turnaround Time:** Standard ☐ Rush ☒ 24hr **Thermometer ID** ~~#113~~ #140 **Correction Factor** ~~-0.5°C~~ -0.6c **Bacteria (only) Sample Condition** Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No **Observed Temp. °C** **Corrected Temp. °C**

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

FORM-006 R 3.2 10/07/21

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 422007
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2432726566**
Incident Name	**NAPP2432726566 PLU 20 BD WEST BATTERY @ 0**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Closure Report Received**
Incident Facility	**[fAPP2126355870] PLU 20 BRUSHY DRAW WEST BTY**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	PLU 20 BD WEST BATTERY
Date Release Discovered	10/20/2024
Surface Owner	Federal

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

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	Cause: Corrosion | Other (Specify) | Produced Water | Released: 5 BBL | Recovered: 5 BBL | Lost: 0 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)	Water dump line

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 422007
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**More info needed to determine if this will be treated as 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: 01/17/2025

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QUESTIONS (continued)

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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	Attached Document
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 300 and 500 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 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 500 and 1000 (ft.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	9840
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	23
GRO+DRO (EPA SW-846 Method 8015M)	23
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	12/11/2024
On what date will (or did) the final sampling or liner inspection occur	01/08/2025
On what date will (or was) the remediation complete(d)	01/08/2025
What is the estimated surface area (in square feet) that will be reclaimed	657
What is the estimated volume (in cubic yards) that will be reclaimed	49
What is the estimated surface area (in square feet) that will be remediated	0
What is the estimated volume (in cubic yards) that will be remediated	0
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 (continued)

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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: 01/17/2025
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 (continued)

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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 (continued)

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QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**416819**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**01/10/2025**
What was the (estimated) number of samples that were to be gathered	**4**
What was the sampling surface area in square feet	**800**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	0
What was the total volume (cubic yards) remediated	0
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	"Delineation and excavation activities were conducted at the Site to address the October 2024, release of produced water. Laboratory analytical results for the confirmation soil samples, collected from the release extent, indicated that all COCs were compliant with the Site Closure Criteria. Based on the soil sample analytical results, no further remediation was required. Laboratory analytical results indicate approximately 49 cubic yards of waste-containing soil across an approximate area of 657 square feet, assuming a maximum depth of 2 feet bgs as indicated by BH01A remain immediately adjacent to and underneath active production equipment. Final reclamation of the remaining waste-containing soil exceeding the reclamation requirement in the top 4 feet will occur dur-ing the final abandonment of the well pad or major construction, whichever comes first."
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.	

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

I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 01/17/2025

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QUESTIONS (continued)

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QUESTIONS

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

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CONDITIONS

Operator:	OGRID:
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CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	Remediation has met 19.15.29 NMAC requirements. Soil impacts exceeding the reclamation standards have been left in place and are required to meet 19.15.29.13D (1) NMAC once the site is no longer reasonably needed for production or subsequent drilling operations.	2/19/2025