ENSOLUM

November 14, 2024

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

Re: Remediation Work Plan
Perla Verde 31 State 001H
Incident Number nAPP2412749555
API 30-025-42063
Lease Number L023780001
Lea 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 work plan to address impacted soil identified at the Perla Verde 31 State 001H (Site). The purpose of the assessment activities was to determine the presence or absence of impacted soil resulting from a crude oil and produced water release at the Site. The following *Work Plan* proposes to remove impacted soil identified within the release extent.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit M, Section 31, Township 19 South, Range 35 East, in Lea County, New Mexico (32.6101°, -103.5042°) and is associated with oil and gas exploration and production operations on State Trust Land managed by the New Mexico State Land Office (SLO). The Site is associated with the Perla Verde 31 State Com #001H (API: 30-025-42063) oil well on SLO lease number L023780001.

On May 2, 2024, an equipment failure resulted in the release of 3 barrels (bbls) of crude oil and 23 bbls of produced water onto the pad surface. XTO immediately dispatched a vacuum truck and 1 bbl of crude oil and 4 bbls of produced water were recovered. XTO submitted a Notification of Release (NOR) on May 6, 2024 and subsequently an Initial C-141 Application (C-141) on May 7, 2024. The release was assigned Incident Number nAPP2412749555.

On August 16, 2024, XTO submitted the following extension request to the NMOCD that was approved the same day:

> *XTO is requesting an extension for a remediation work plan or closure report required in 19.15.29.12.B.(1) NMAC for the attached locations/incident numbers listed in this message. We understand that the releases all occurred between February and March of this year and attendant documentation is overdue. Kindly be aware that these occurred during a high turnover period of personnel in our department, transitioning staff, and a large company-wide data migration that collectively disturbed our incident tracking efforts for remediation. In our efforts to correct the*

issue, XTO is proactively assigning each of these incidents to be successfully addressed by contractors for closure in accordance with 19.15.29.12 NMAC.

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 and potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is less than 100 feet below ground surface (bgs) but greater than 50 feet bgs based on the nearest groundwater well data. On May 3, 1996, a United States Geological Survey (USGS) permitted livestock watering well (USGS 323536103301101) was advanced to a depth of 70 feet bgs. The location of the well is approximately 0.88 miles south of the release and is depicted on Figure 1. The USGS recorded the depth to water at 56.39 feet bgs. The Well Record is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is an seasonal dry wash, located approximately 5,100 feet north of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area).

Based on the results of the Site Characterization, and the New Mexico Oil Conservation Division (NMOCD) preference for data for depth to groundwater be withing ½ mile and within the last 25 years, 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): 100 mg/kg
- Chloride: 600 mg/kg

CULTURAL PROPERTIES PROTECTION

Since the incident occurred on pad, 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.

BIOLOGICAL COMPLIANCE AND REPORTING

Ensolum personnel conducted a desktop review to establish if the Site is within an area of possible threatened, endangered, and sensitive wildlife and plant species, environmentally sensitive areas, surface waters, and/or sensitive soils.

- The Site is located within an area of possible Lesser Prairie Chickens and Dunes Sage Brush Lizards habitat.
    - From March 1st through June 15th, no remediation activities will occur between the hours of 3:00 am to 9:00 am to protect any Lesser Prairie Chickens within the area.

  - Due to the release occurring on pad surface, no suitable habitat was identified for the Dunes Sage Brush Lizards at the Site. Remediation efforts are not expected to occur outside of the pad boundaries.

- No environmentally sensitive receptors were located near the Site as mentioned in the Site Characterization.

- The soil type is classified as Pyote and Maljamar fine sands according to the Web Soil Survey. Pyote and Maljamar fine sands are considered a sensitive soil by the SLO definition. The release occurred on the pad surface limiting contact with potential sensitive soils and was found to have occurred only on the pad caliche.

SITE ASSESSMENT AND DELINEATION ACTIVITIES

On August 29, 2024 Ensolum personnel conducted a Site visit to evaluate the release extent based on information provided on the C-141, internal reports, 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 completed during the Site visits and a photographic log is included in Appendix B.

On November 12, 2024, Ensolum returned to the Site to oversee delineation activities. Delineation potholes PH01 and PH02 were advanced via backhoe to assess the vertical extent of the release to a maximum depth of 4 feet bgs. Delineation soil samples were collected from each pothole at depths ranging from 0.5 feet to 4 feet bgs. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The delineation soil sample locations were mapped utilizing a GPS unit and are depicted on Figure 2. Field screening results and observations were logged on lithologic/soil sampling logs, which are included in Appendix C.

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 contaminants 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.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for delineation soil sample for PH01 and PH02, collected at 0.5 feet bgs, indicated chloride concentrations exceeded Closure Criteria. All terminal soil samples of the delineation potholes were in compliance with the Closure Criteria, successfully defining the vertical extent of the release. The laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included in Appendix D.

PROPOSED REMEDIATION WORK PLAN

The delineation soil sampling results indicate soil containing elevated chloride concentrations exist across an approximate 4,205 square foot area and extends to depths ranging from 0.5 feet to 4 feet bgs. XTO proposes to complete the following remediation activities:

- Excavation of impacted soil to a depth of 2 feet to 4 feet bgs. Excavation will proceed laterally until sidewall samples confirm all COC concentrations are compliant with Closure Criteria.
- An estimated 470 cubic yards of impacted soil will be excavated and disposed of at the R360 facility in Hobbs, New Mexico
- The excavation will be backfilled with locally procured material and recontoured to match pre-existing conditions.

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

Tracy Hillard
Project Engineer

Ashley Ager, PG, MS
Program Director

cc: Colton Brown, XTO
Kaylan Dirkx, XTO
SLO

Appendices:

Figure 1	Site Location Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Proposed Excavation Extent
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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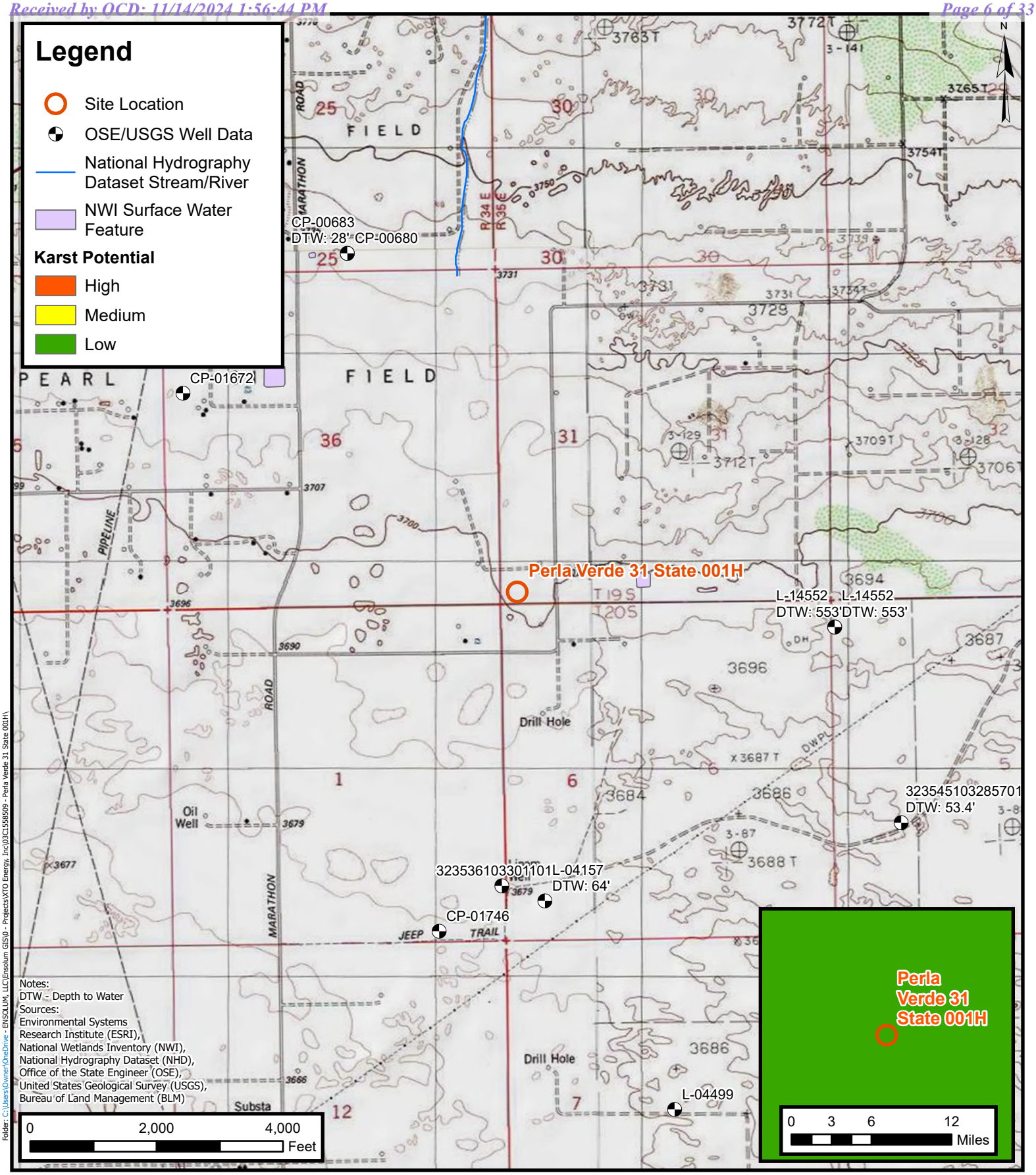
FIGURES



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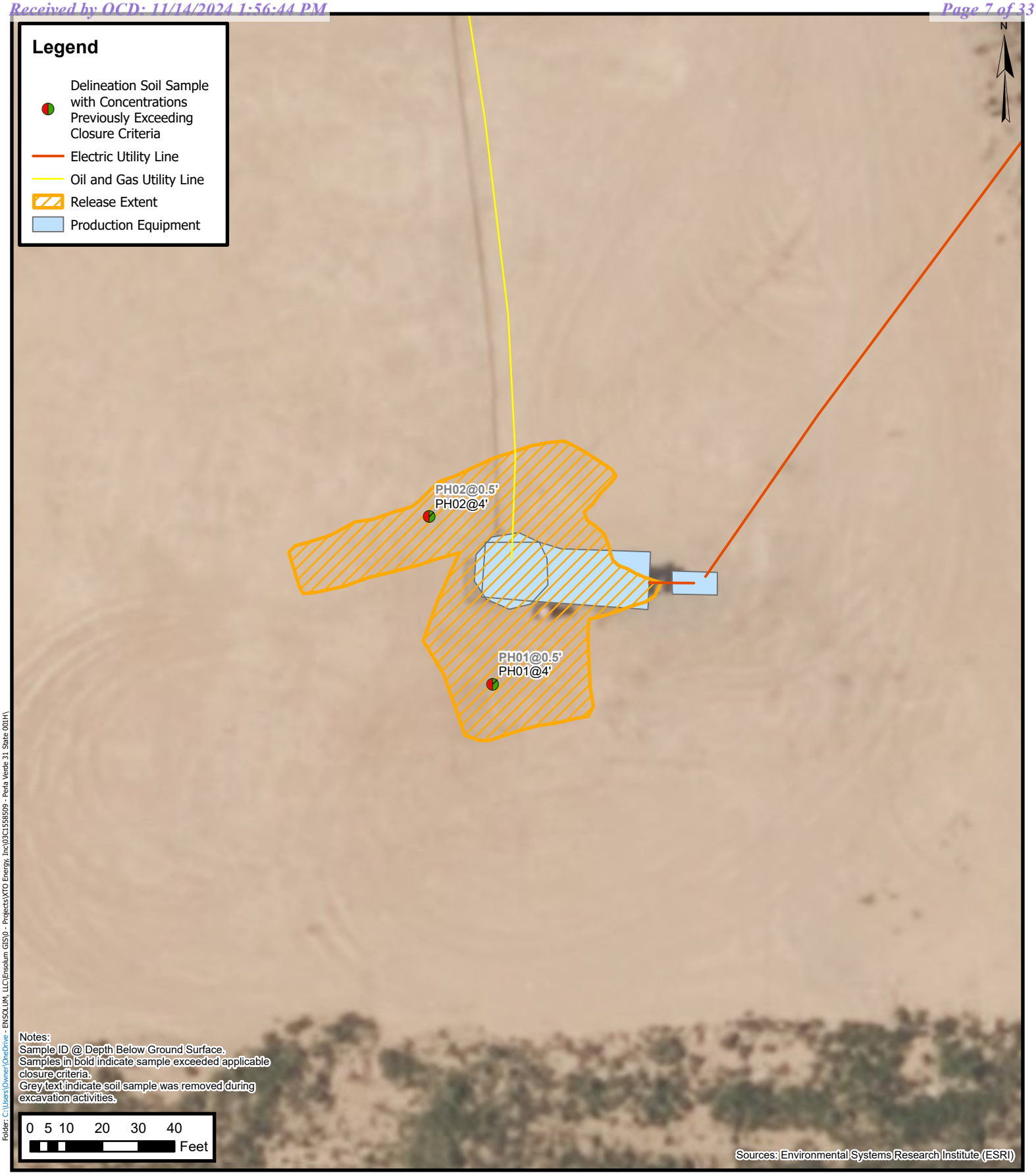
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

XTO Energy, Inc
Perla Verde 31 State 001H
Incident Number: nAPP2412749555
Unit M, Sec 31, T19S, R35E
Lea County, New Mexico

FIGURE 1



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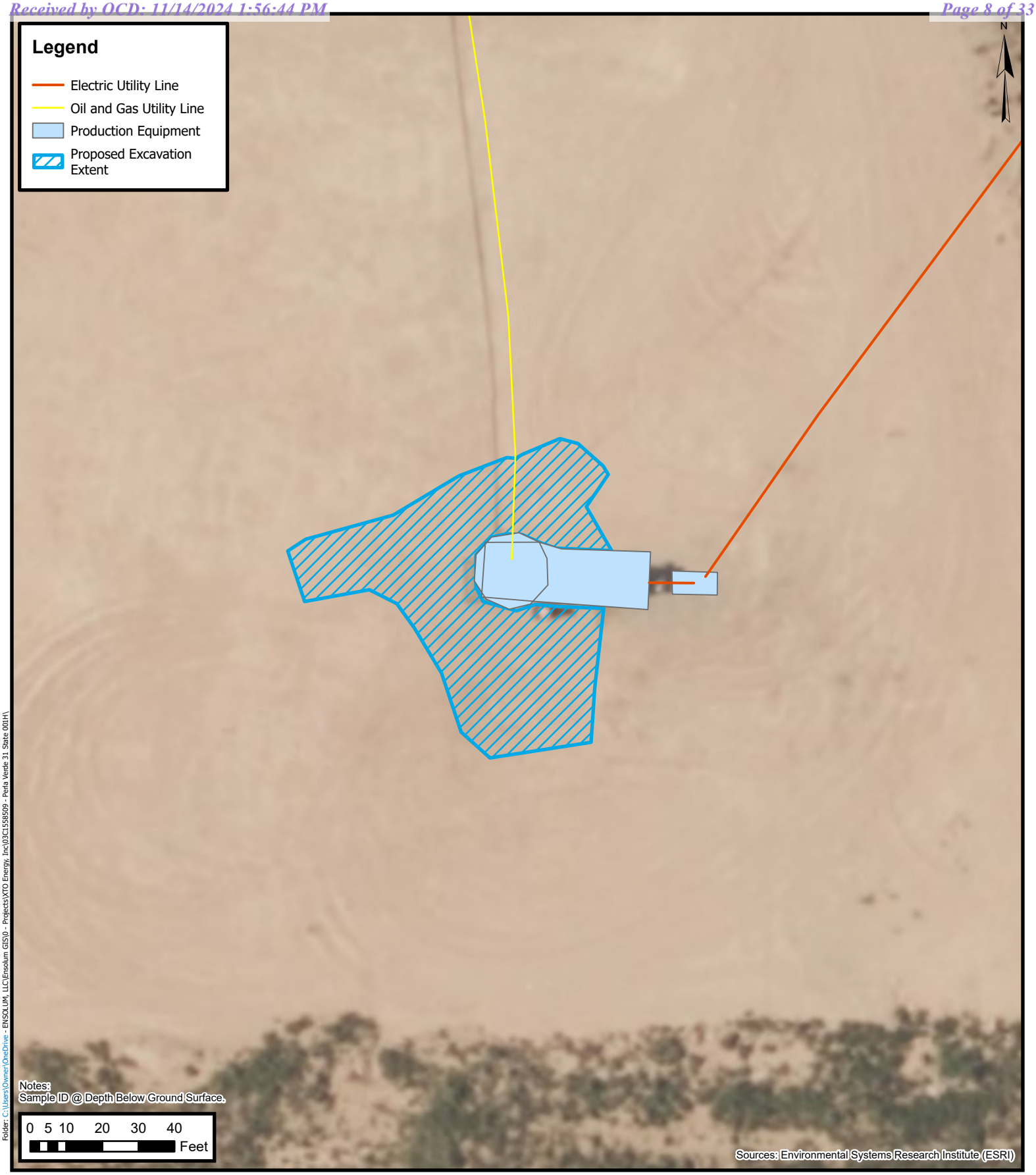
Environmental, Engineering and Hydrogeologic Consultants

Delineation Soil Sample Locations

XTO Energy, Inc
Perla Verde 31 State 001H
Incident Number: nAPP2412749555
Unit M, Sec 31, T19S, R35E
Lea County, New Mexico

FIGURE 2



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Proposed Excavation Extent

XTO Energy, Inc
Perla Verde 31 State 001H
Incident Number: nAPP2412749555
Unit M, Sec 31, T19S, R35E
Lea County, New Mexico

FIGURE 3

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Perla Verde 31 State 001H
XTO Energy, Inc
Lea County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Delineation Soil Samples										
PH01	11/12/2024	0.5	<0.050	<0.300	<10.0	12.9	<10.0	12.9	12.9	**4,400**
PH01A	11/12/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
PH02	11/12/2024	0.5	<0.050	<0.300	<10.0	70.7	10.3	70.7	81.0	**3,360**
PH02A	11/12/2024	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160

Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
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

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APPENDIX A

Referenced Well Records

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.

Groundwater levels for New Mexico

Click to hide state-specific text

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 323536103301101

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 323536103301101 20S.35E.06.331332

Lea County, New Mexico
Latitude 32°35'50", Longitude 103°30'17" NAD27
Land-surface elevation 3,678.00 feet above NGVD29
The depth of the well is 70 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source measur
1961-03-08		D	62610		3619.30	NGVD29	1	Z		
1961-03-08		D	62611		3620.85	NAVD88	1	Z		
1961-03-08		D	72019	58.70			1	Z		
1971-01-21		D	62610		3620.42	NGVD29	1	Z		
1971-01-21		D	62611		3621.97	NAVD88	1	Z		
1971-01-21		D	72019	57.58			1	Z		
1976-02-19		D	62610		3616.76	NGVD29	1	Z		
1976-02-19		D	62611		3618.31	NAVD88	1	Z		
1976-02-19		D	72019	61.24			1	Z		
1986-04-02		D	62610		3621.09	NGVD29	1	Z		
1986-04-02		D	62611		3622.64	NAVD88	1	Z		
1986-04-02		D	72019	56.91			1	Z		
1991-07-03		D	62610		3623.77	NGVD29	1	Z		
1991-07-03		D	62611		3625.32	NAVD88	1	Z		
1991-07-03		D	72019	54.23			1	Z		

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1996-03-05		D	62610		3621.61	NGVD29	1		S	
1996-03-05		D	62611		3623.16	NAVD88	1		S	
1996-03-05		D	72019	56.39			1		S	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

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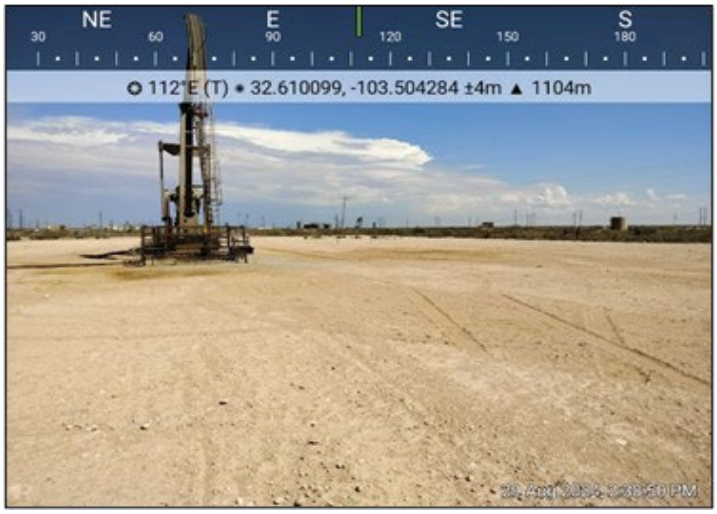
APPENDIX B

Photographic Log

Photographic Log
XTO Energy, Inc.
Perla Verde 31 State 001H
nAPP2412749555

Photograph 1 Date: May 2, 2024

Description: View of release foot print facing east.



Photograph 2 Date: August 29, 2024

Description: View of release foot print facing east.

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APPENDIX C

Lithologic Soil Sampling Logs

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Sample Name: PH01	Date: 11/12/2024
Site Name: Perla Verde 31 State 001H	
Incident Number: NAPP2412749555	
Job Number: 03C1558509	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: JB	Method: Backhoe
Coordinates: 32.609952, -103.504099	Hole Diameter: 24"
	Total Depth: 4'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 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, beige, fine grained, poorly graded
D	6,356	0.0	N	PH01	0.5			
D	2,346	0.0	N		1	1		
D	889	0.1	N		2	2	SP	(2-4') SAND, gray brown, little clay, poorly graded
D	806	0.0	N		3	3		
D	425	0.1	N	PH01A	4	4		

Total Depth @ 4 feet bgs

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Sample Name: PH02	Date: 11/12/2024
Site Name: Perla Verde 31 State 001H	
Incident Number: NAPP2412749555	
Job Number: 03C1558509	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: JB	Method: Backhoe	
Coordinates: 32.610081, -103.504153	Hole Diameter: 24"	Total Depth: 2'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 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, fine grained, poorly graded
D	5,443	0.1	N	PH02	0.5			
D	963	0.1	N		1	1		
D	201	0.3	N	PH02A	2	2		
						Total Depth @ 2 feet bgs		

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APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

CARDINAL Laboratories

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

November 13, 2024

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PERLA VERDE 31 STATE 001 H

Enclosed are the results of analyses for samples received by the laboratory on 11/12/24 12:11.

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 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:	11/12/2024	Sampling Date:	11/12/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	PERLA VERDE 31 STATE 001 H	Sampling Condition:	Cool & Intact
Project Number:	03C1558509	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.6101, -103.5042		

Sample ID: PH 01 0.5 (H246883-01)

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	11/12/2024	ND	2.00	100	2.00	4.01	
Toluene*	<0.050	0.050	11/12/2024	ND	1.93	96.6	2.00	3.95	
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	1.94	97.1	2.00	3.34	
Total Xylenes*	<0.150	0.150	11/12/2024	ND	5.76	95.9	6.00	3.33	
Total BTEX	<0.300	0.300	11/12/2024	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	**4400**	16.0	11/13/2024	ND	416	104	400	12.2	

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	11/12/2024	ND	184	92.2	200	1.78	
DRO >C10-C28*	**12.9**	10.0	11/12/2024	ND	186	93.1	200	9.57	
EXT DRO >C28-C36	<10.0	10.0	11/12/2024	ND					

Surrogate: 1-Chlorooctane *99.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *111 %* *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:	11/12/2024	Sampling Date:	11/12/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	PERLA VERDE 31 STATE 001 H	Sampling Condition:	Cool & Intact
Project Number:	03C1558509	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.6101, -103.5042		

Sample ID: PH 01A 4 (H246883-02)

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	11/12/2024	ND	2.00	100	2.00	4.01	
Toluene*	<0.050	0.050	11/12/2024	ND	1.93	96.6	2.00	3.95	
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	1.94	97.1	2.00	3.34	
Total Xylenes*	<0.150	0.150	11/12/2024	ND	5.76	95.9	6.00	3.33	
Total BTEX	<0.300	0.300	11/12/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.5 %* *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	**288**	16.0	11/13/2024	ND	416	104	400	12.2	

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	11/12/2024	ND	184	92.2	200	1.78	
DRO >C10-C28*	<10.0	10.0	11/12/2024	ND	186	93.1	200	9.57	
EXT DRO >C28-C36	<10.0	10.0	11/12/2024	ND					

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

Surrogate: 1-Chlorooctadecane *112 %* *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:	11/12/2024	Sampling Date:	11/12/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	PERLA VERDE 31 STATE 001 H	Sampling Condition:	Cool & Intact
Project Number:	03C1558509	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.6101, -103.5042		

Sample ID: PH 02 0.5 (H246883-03)

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	11/12/2024	ND	2.00	100	2.00	4.01	
Toluene*	<0.050	0.050	11/12/2024	ND	1.93	96.6	2.00	3.95	
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	1.94	97.1	2.00	3.34	
Total Xylenes*	<0.150	0.150	11/12/2024	ND	5.76	95.9	6.00	3.33	
Total BTEX	<0.300	0.300	11/12/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.5 %* *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	**3360**	16.0	11/13/2024	ND	416	104	400	12.2	

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	11/13/2024	ND	184	92.2	200	1.78	
DRO >C10-C28*	**70.7**	10.0	11/13/2024	ND	186	93.1	200	9.57	
EXT DRO >C28-C36	**10.3**	10.0	11/13/2024	ND					

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

Surrogate: 1-Chlorooctadecane *114 %* *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:	11/12/2024	Sampling Date:	11/12/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	PERLA VERDE 31 STATE 001 H	Sampling Condition:	Cool & Intact
Project Number:	03C1558509	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.6101, -103.5042		

Sample ID: PH 02A 2 (H246883-04)

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	11/12/2024	ND	2.00	100	2.00	4.01	
Toluene*	<0.050	0.050	11/12/2024	ND	1.93	96.6	2.00	3.95	
Ethylbenzene*	<0.050	0.050	11/12/2024	ND	1.94	97.1	2.00	3.34	
Total Xylenes*	<0.150	0.150	11/12/2024	ND	5.76	95.9	6.00	3.33	
Total BTEX	<0.300	0.300	11/12/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.5 %* *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	**160**	16.0	11/13/2024	ND	416	104	400	12.2	

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	11/13/2024	ND	184	92.2	200	1.78	
DRO >C10-C28*	<10.0	10.0	11/13/2024	ND	186	93.1	200	9.57	
EXT DRO >C28-C36	<10.0	10.0	11/13/2024	ND					

Surrogate: 1-Chlorooctane *110 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *118 %* *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

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: 3122 National Parks Hwy	Company: XTO Energy Inc
City: ~~Midland~~ Carlsbad State: ~~TX~~ NM Zip: 88220	Attn: Colton Brown
Phone #: 575 937 3906 Fax #:	Address: 3104 E Green St
Project #: 03C1558509 Project Owner: XTO	City: Carlsbad
Project Name: Perla Verde 31 State 001H	State: NM Zip: 88220
Project Location: 32.6101, -103.5042	Phone #:
Sampler Name: Joshua Bosley	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	ANALYSIS REQUEST: Chlorides	TPH	BTEX
H246883																		
1	PH01	0.5	G	1			X					X		11.12.24	0940	X	X	X
2	PH01A	4					X					X		1	0955	X	X	X
3	PH02	0.5					X					X		1	1010	X	X	X
4	PH02A	2	G	1			X					X		11.12.24	1015	X	X	X

BTEX

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: 11-12-24 Time: 1211	Received By: SRodriguez
Relinquished By:	Date: Time:	Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
THillard@ensolum.com, TMorrisey@ensolum.com, KThomason@ensolum.com
REMARKS:
incident: nAPP2412749555
CC: 1149661001

Turnaround Time: 24hr Standard Rush #140
Thermometer ID #113 Correction Factor -0.5°C -0.6°

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

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Observed Temp. °C 5.7
Corrected Temp. °C 5.1

Sample Condition: Cool ☑ Yes Intact ☐ Yes ☐ No ☐ No
CHECKED BY: (Initials) SR

FORM-006 R 3.2 10/07/21

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

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

QUESTIONS

Action 403401

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 403401
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2412749555**
Incident Name	**NAPP2412749555 PERLA VERDE 31 STATE 001H @ 30-025-42063**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Plan Received**
Incident Well	**[30-025-42063] PERLA VERDE 31 STATE COM #001H**

Location of Release Source *Please answer all the questions in this group.*	
Site Name	PERLA VERDE 31 STATE 001H
Date Release Discovered	05/02/2024
Surface Owner	State

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	Cause: Equipment Failure | Well | Crude Oil | Released: 3 BBL | Recovered: 1 BBL | Lost: 2 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure | Well | Produced Water | Released: 23 BBL | Recovered: 4 BBL | Lost: 19 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 (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 403401
	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	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.**

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: Alan Romero Title: Regulatory Analyst Email: alan.romero1@exxonmobil.com Date: 05/07/2024

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 403401
	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 51 and 75 (ft.)
What method was used to determine the depth to ground water	U.S. Geological Survey
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 ½ and 1 (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	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan		
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.		
Requesting a remediation plan approval with this submission		Yes
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)	4400
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	81
GRO+DRO	(EPA SW-846 Method 8015M)	71
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		08/29/2024
On what date will (or did) the final sampling or liner inspection occur		02/12/2025
On what date will (or was) the remediation complete(d)		02/12/2025
What is the estimated surface area (in square feet) that will be reclaimed		4205
What is the estimated volume (in cubic yards) that will be reclaimed		470
What is the estimated surface area (in square feet) that will be remediated		4205
What is the estimated volume (in cubic yards) that will be remediated		470
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)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 403401
	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: Kailee Smith Title: Regulatory Analyst Email: kailee.smith@exxonmobil.com Date: 11/14/2024
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 (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 403401
	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 (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 403401
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**400219**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**11/15/2024**
What was the (estimated) number of samples that were to be gathered	**40**
What was the sampling surface area in square feet	**4500**

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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CONDITIONS

Action 403401

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 403401
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scwells	Remediation plan approved. Submit remediation closure report to the OCD by 2/12/24.	11/14/2024