



December 6, 2024

**New Mexico Oil Conservation Division**

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

**Re: Closure Request  
PLU Phantom Banks 20-25-31  
Incident Number nAPP2418355674  
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, excavation, and soil sampling activities at the PLU Phantom Banks 20-25-31 (Site). Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this *Closure Request*, describing assessment, excavation, and delineation activities that have occurred and requesting no further action for Incident Number nAPP2418355674.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit D, Section 20, Township 25 South, Range 31 East, in Eddy County, New Mexico (32.1224553°, -103.8060702°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On June 10, 2024, corrosion of a flowline resulted in the release of approximately 4 barrels (bbls) of crude oil and 12 bbls of produced water. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 1 bbls of crude oil and 4 bbls of produced water 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 July 1, 2024. The release was assigned Incident Number nAPP2418355674.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

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

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest groundwater well is United States Geological Survey (USGS) well 320643103465002, located approximately 1.5 miles southeast of the Site. The recorded depth to groundwater is 318 feet bgs with a total depth of 400 feet, measured on February 17, 1959. All wells used for depth to water determination are depicted on Figure 1 and the referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a playa lake approximately 3,698 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area).

Based on the results of the Site Characterization, and NMOCD's preference for depth to groundwater data to be less than ½ mile and 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

## SITE ASSESSMENT ACTIVITIES

On June 14, 2024, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the C-141 and visual observations. Eleven delineation soil samples (SS01 through SS11) were collected within and around the release extent from a depth of 0.5 feet bgs to assess the lateral extent of the release. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride Hach® chloride QuanTab® test strips. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the site visit and a photographic log is included in Appendix B.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of the following constituents of concern (COC): 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 for delineation soil samples SS01 through SS04, collected within the release extent indicated that BTEX, TPH, and/or chloride concentrations exceeded the Closure Criteria. Laboratory analytical results for delineation soil samples SS05 through SS11, collected around the release extent, indicated that all COC concentrations were compliant with the Closure Criteria, and confirmed the lateral extent of the release. Based on the laboratory analytical results, additional remediation activities were warranted.

## DELINEATION AND EXCAVATION SOIL SAMPLING ACTIVITIES

From July 11, 2024 to September 17, 2024, Ensolum personnel were at the Site to oversee delineation and excavation activities. Delineation potholes PH01 through PH07 were advanced via trackhoe to terminal depths ranging from 4 feet bgs to 5 feet bgs within the release extent, to assess the vertical extent of the release. Delineation soil samples were collected from each pothole at depths ranging from 0.5 feet to 5 feet bgs. Soil from the delineation potholes was field screened for VOCs and chloride. Field

screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil sample locations are depicted on Figure 2.

Impacted soil was excavated from the release area as indicated by visible staining, field screening activities, and laboratory analytical results for the delineation soil samples. Excavation activities were performed using a trackhoe and transport vehicle. The excavation occurred on the well pad near the production equipment. To direct excavation activities, Ensolum personnel screened soil for VOCs and chloride. Following removal of impacted soil, Ensolum personnel collected 5-point composite soil samples representing no more than 200 square feet from the sidewalls and floor of the excavation. The 5-point composite soil samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Confirmation soil samples FS01 through FS30 were collected from the floor of the excavation at depths of 1 foot to 6 feet bgs. Confirmation sidewall soil samples SW01 and SW14 were collected from the sidewalls of the excavation at depths ranging from ground surface to 4 feet bgs. Due to gradual sloping of the excavation floor, some floor samples were collected at deeper depths, 5 feet to 6 feet bgs, within the excavation than the external sidewalls. These samples were depths labeled with the deepest aliquot depth collected within the 200 square foot sampling area. The confirmation soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and confirmation soil sample locations are presented on Figure 3.

The final excavation extent measured approximately 5,572 square feet. A total of approximately 930 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Halfway Landfill Service in Hobbs, New Mexico. After completion of confirmation sampling, the excavation area was backfilled with material purchased locally and the Site was recontoured to match pre-existing site conditions.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for delineation soil samples PH01 and PH02, collected at 2 feet bgs, indicated that chloride concentrations exceeded Closure Criteria. Laboratory analytical results for all other delineation soil samples indicated that all COC concentrations were compliant with the Closure Criteria. In addition, laboratory analytical results from delineation pothole PH01 at 4 feet and PH02 at 5 feet bgs indicate COC concentrations are compliant with the Closure Criteria confirming the vertical extent of the release.

Laboratory analytical results for the confirmation floor soil samples FS01 through FS30 and sidewall soil samples SW01 through SW14 indicated that all COC concentrations were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

## CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the June 10, 2024, release of crude oil and produced water. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated that all COC concentrations were compliant with the Site Closure Criteria. Based on the soil sample analytical results, no further remediation was required. XTO has backfilled the excavation with material purchased locally and recontoured the Site to match pre-existing site conditions.

Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater has been estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the Site. XTO

XTO Energy, Inc  
Closure Request  
PLU Phantom Banks 20-25-31



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believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number nAPP2418355674.

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

Sincerely,  
**Ensolum, LLC**

Handwritten signature of Tracy Hillard in black ink.

Tracy Hillard  
Project Manager

Handwritten signature of Tacoma Morrissey in black ink.

Tacoma Morrissey  
Associate Principal

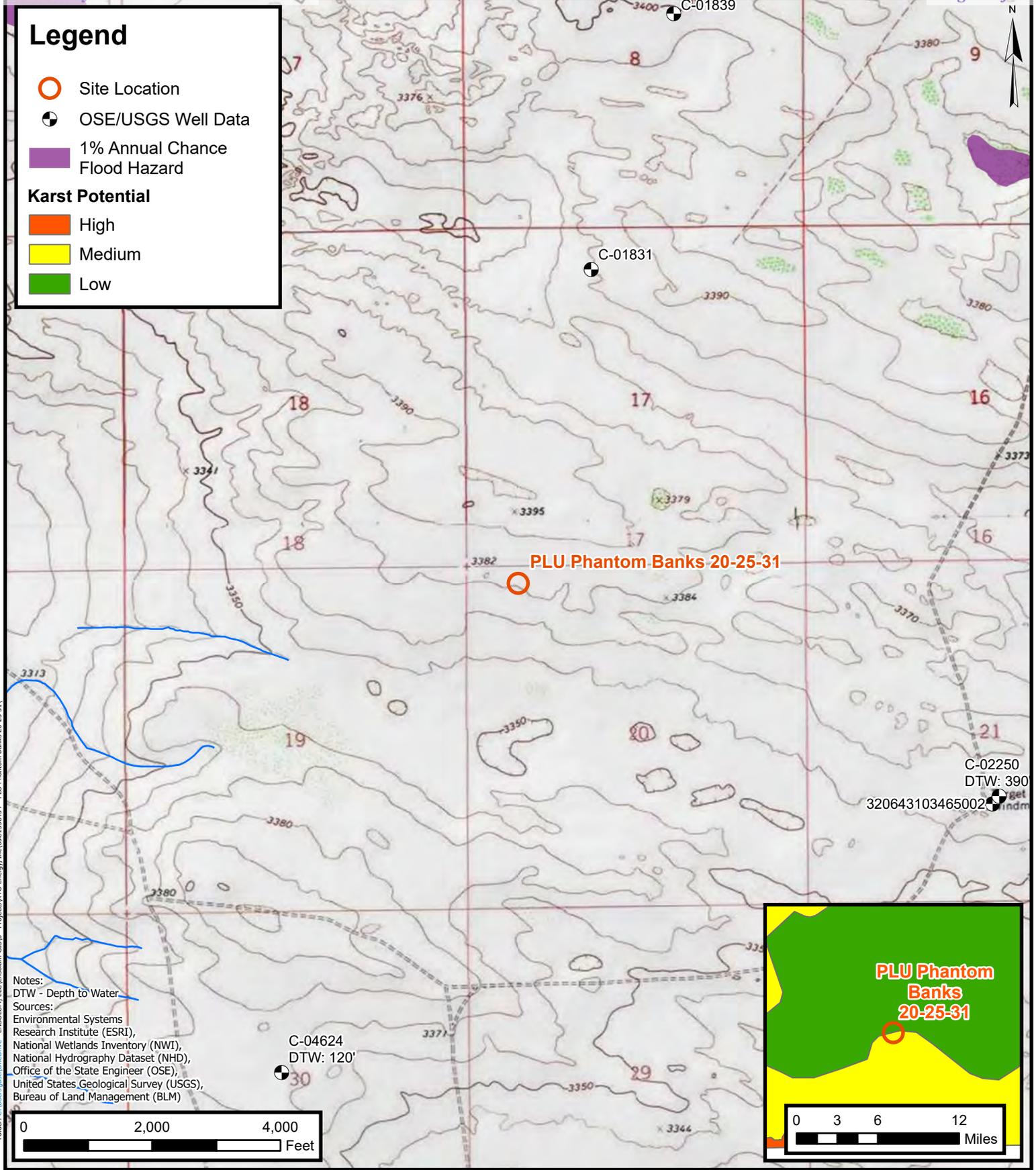
cc: Colton Brown, XTO  
Kaylan Dirkx, XTO  
Bureau of Land Management

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



FIGURES

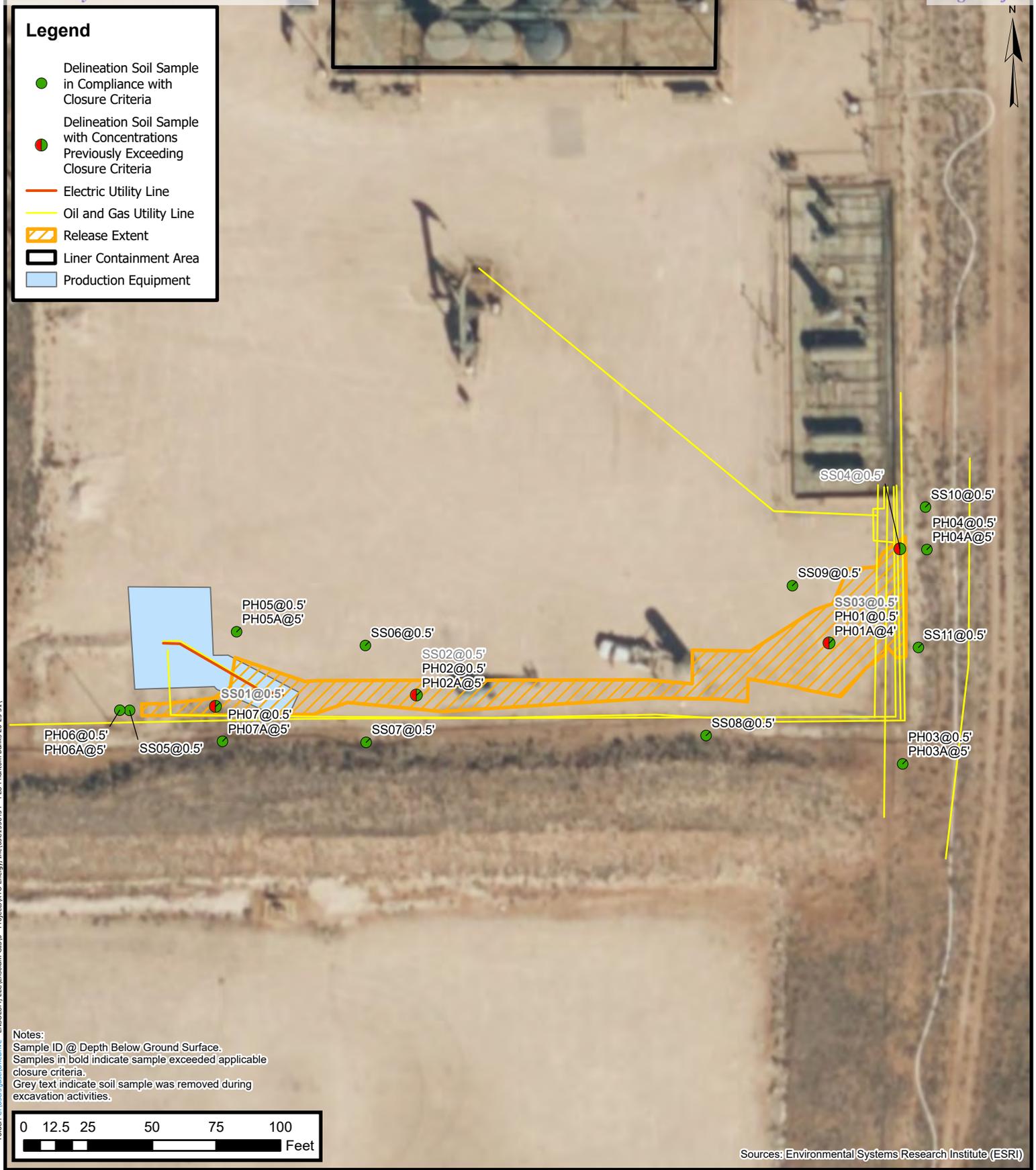


**Site Receptor Map**  
 XTO Energy, Inc  
 PLU Phantom Banks 20-25-31  
 Incident Number: nAPP2418355674  
 Unit D, Sec 20, T25S, R31E  
 Eddy County, New Mexico

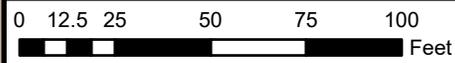
**FIGURE**  
 1

### Legend

- Delineation Soil Sample in Compliance with Closure Criteria
- Delineation Soil Sample with Concentrations Previously Exceeding Closure Criteria
- Electric Utility Line
- Oil and Gas Utility Line
- Release Extent
- Liner Containment Area
- Production Equipment



Notes:  
 Sample ID @ Depth Below Ground Surface.  
 Samples in bold indicate sample exceeded applicable closure criteria.  
 Grey text indicate soil sample was removed during excavation activities.



Sources: Environmental Systems Research Institute (ESRI)



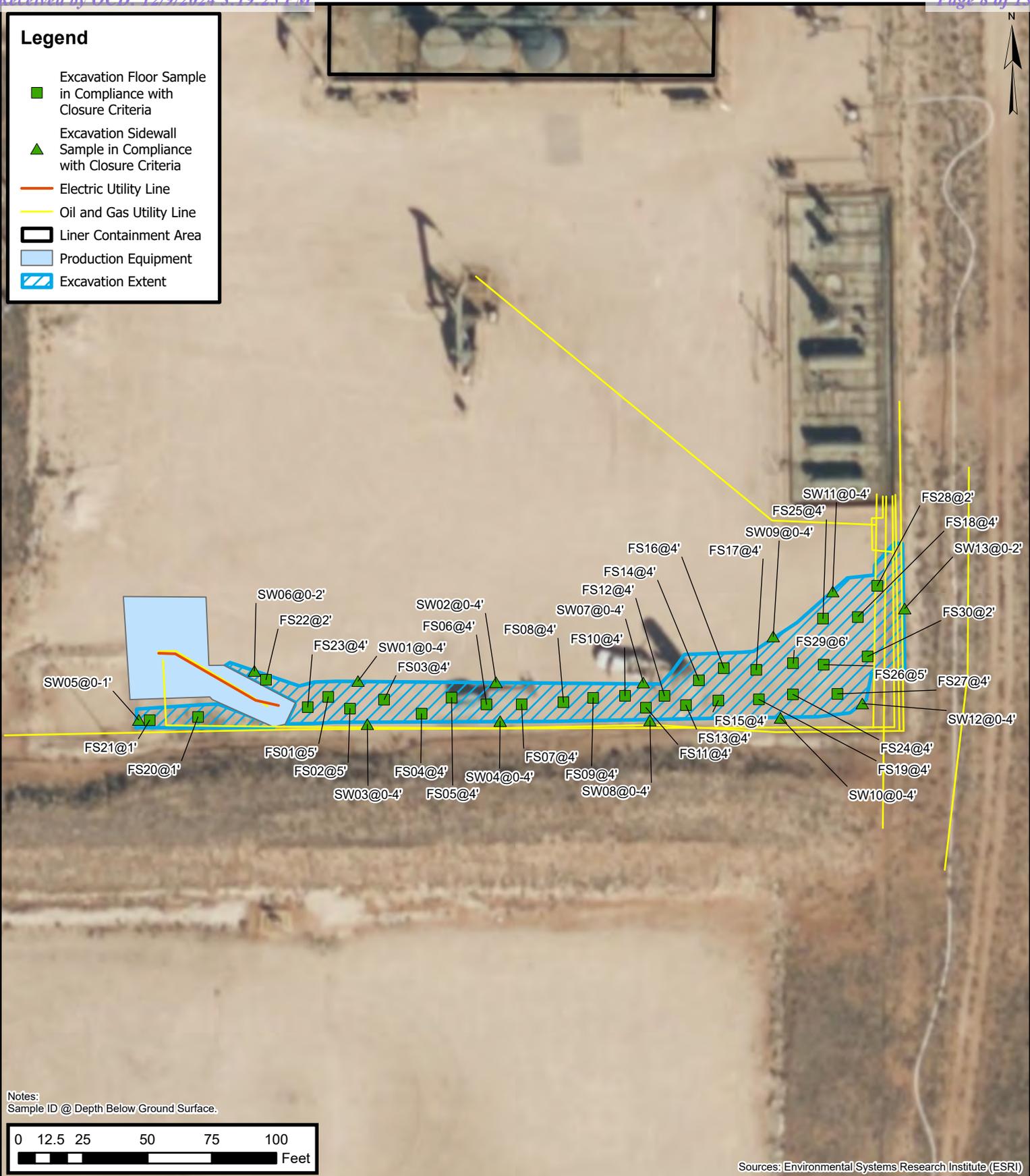
## Delineation Soil Sample Locations

XTO Energy, Inc  
 PLU Phantom Banks 20-25-31  
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 Unit D, Sec 20, T25S, R31E  
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**FIGURE**  
**2**

### Legend

- Excavation Floor Sample in Compliance with Closure Criteria
- ▲ Excavation Sidewall Sample in Compliance with Closure Criteria
- Electric Utility Line
- Oil and Gas Utility Line
- Liner Containment Area
- Production Equipment
- Excavation Extent



Notes:  
 Sample ID @ Depth Below Ground Surface.



Sources: Environmental Systems Research Institute (ESRI)

## Excavation Soil Sample Locations

XTO Energy, Inc  
 PLU Phantom Banks 20-25-31  
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 Unit D, Sec 20, T25S, R31E  
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## FIGURE

# 3



TABLES



**TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
PLU Phantom Banks 20-25-31  
XTO Energy, Inc  
Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
<b>NMOCDC Table I Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>100</b>	<b>600</b>
<b>Delineation Soil Samples</b>										
SS01	06/14/2024	0.5	<0.050	8.5	453	11,700	1,910	12,153	14,063	9,330
SS02	06/14/2024	0.5	<0.050	0.305	10.0	855	163	865	1,028	12,000
PH02	07/11/2024	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	6,000
PH02A	07/11/2024	5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
SS03	06/14/2024	0.5	<0.100	29.5	390	10,400	1,960	10,790	12,750	12,000
PH01	07/11/2024	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	3,480
PH01A	07/11/2024	4	<0.050	<0.300	<10.0	18.9	<10.0	18.9	18.9	272
SS04	06/14/2024	0.5	4.70	177	3,560	28,200	5,560	31,760	37,320	7,860
SS05	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
SS06	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
SS07	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS08	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS09	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0
SS10	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS11	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
PH03	07/25/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
PH03A	07/25/2024	5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
PH04	07/25/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
PH04A	07/25/2024	5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
PH05	07/25/2024	0.5	<0.050	<0.300	<10.0	12.8	<10.0	12.8	12.8	112
PH05A	07/25/2024	5	<0.050	<0.300	<10.0	17.2	<10.0	17.2	17.2	96.0
PH06	07/25/2024	0.5	<0.050	<0.300	<10.0	23.4	<10.0	23.4	23.4	112
PH06A	07/25/2024	5	<0.050	<0.300	<10.0	15.7	<10.0	15.7	15.7	112
PH07	07/25/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
PH07A	07/25/2024	5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
<b>Confirmation Soil Samples</b>										
FS01	07/25/2024	5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
FS02	07/25/2024	5	<0.050	<0.300	<10.0	14.1	<10.0	14.1	14.1	144
FS03	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
FS04	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
FS05	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272



**TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
PLU Phantom Banks 20-25-31  
XTO Energy, Inc  
Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
FS06	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
FS07	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
FS08	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
FS09	07/25/2024	4	<0.050	<0.300	<10.0	10.6	<10.0	10.6	10.6	128
FS10	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0
FS11	07/25/2024	4	<0.050	<0.300	<10.0	12.1	<10.0	12.1	12.1	112
FS12	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0
FS13	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
FS14	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
FS15	07/25/2024	4	<0.050	<0.300	<10.0	41.1	12.8	41.1	53.9	96.0
FS16	07/25/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0
FS17	09/17/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
FS18	09/17/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
FS19	09/17/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
FS20	09/05/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	320
FS21	09/05/2024	1	<0.050	<0.300	<10.0	50.1	13.7	50.1	63.8	272
FS22	09/05/2024	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
FS23	09/11/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
FS24	09/17/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	528
FS25	09/17/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
FS26	09/17/2024	5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	320
FS27	09/17/2024	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
FS28	09/17/2024	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
FS29	09/11/2024	6	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	224
FS30	09/17/2024	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	432
SW01	07/25/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
SW02	07/25/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
SW03	07/25/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
SW04	07/25/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
SW05	09/05/2024	0 - 1	<0.050	<0.300	<10.0	61.7	15.5	61.7	77.2	288
SW06	09/05/2024	0 - 2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SW07	09/11/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256



**TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
PLU Phantom Banks 20-25-31  
XTO Energy, Inc  
Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
<b>NMOCD Table I Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>100</b>	<b>600</b>
SW08	09/11/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
SW09	09/11/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
SW10	09/11/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	224
SW11	09/17/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
SW12	09/17/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
SW13	09/17/2024	0 - 2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
SW14	09/17/2024	0 - 4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	304

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

Grey text indicates soil sample removed during excavation activities



## APPENDIX A

### Referenced Well Records

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USGS Home  
 Contact USGS  
 Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:  Geographic Area:

Click to hide News Bulletins

- Explore the [NEW USGS National Water Dashboard](#) interactive map to access real-time water data from over 13,500 stations nationwide.
- [Full News](#)

Groundwater levels for 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 = 

- 320643103465002

Minimum number of levels = 1  
[Save file of selected sites](#) to local disk for future upload

USGS 320643103465002 25S.31E.21.413314A

Eddy County, New Mexico  
 Latitude 32°06'46.0", Longitude 103°46'56.3" NAD83  
 Land-surface elevation 3,374.00 feet above NGVD29  
 The depth of the well is 400 feet below land surface.  
 This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.  
 This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>

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
1959-02-17			D	62610	3055.98	NGVD29	P	Z		
1959-02-17			D	62611	3057.66	NAVD88	P	Z		
1959-02-17			D	72019	318.02		P	Z		
2013-01-17	19:40 UTC		m	62610		NGVD29	D	S	USGS	
2013-01-17	19:40 UTC		m	62611		NAVD88	D	S	USGS	
2013-01-17	19:40 UTC		m	72019			D	S	USGS	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet

Section	Code	Description
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	D	Dry
Status	P	Pumping
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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

**Title: Groundwater for New Mexico: Water Levels**

**URL: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>**



Page Contact Information: [New Mexico Water Data Maintainer](#)

Page Last Modified: 2024-06-11 17:09:23 EDT

0.25 0.22 nadww01



## APPENDIX B

### Photographic Log

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**Photographic Log**  
XTO Energy, Inc  
PLU Phantom Banks 20-25-31  
nAPP2148355674



Photograph: 1 Date: 6/14/2024  
Description: Soil staining in release footprint  
View: West

Photograph: 2 Date: 7/11/2024  
Description: Delineation activities  
View: Southwest



Photograph: 3 Date: 7/24/2024  
Description: Excavation activities  
View: Southeast

Photograph: 4 Date: 9/10/2024  
Description: Excavation activities  
View: South

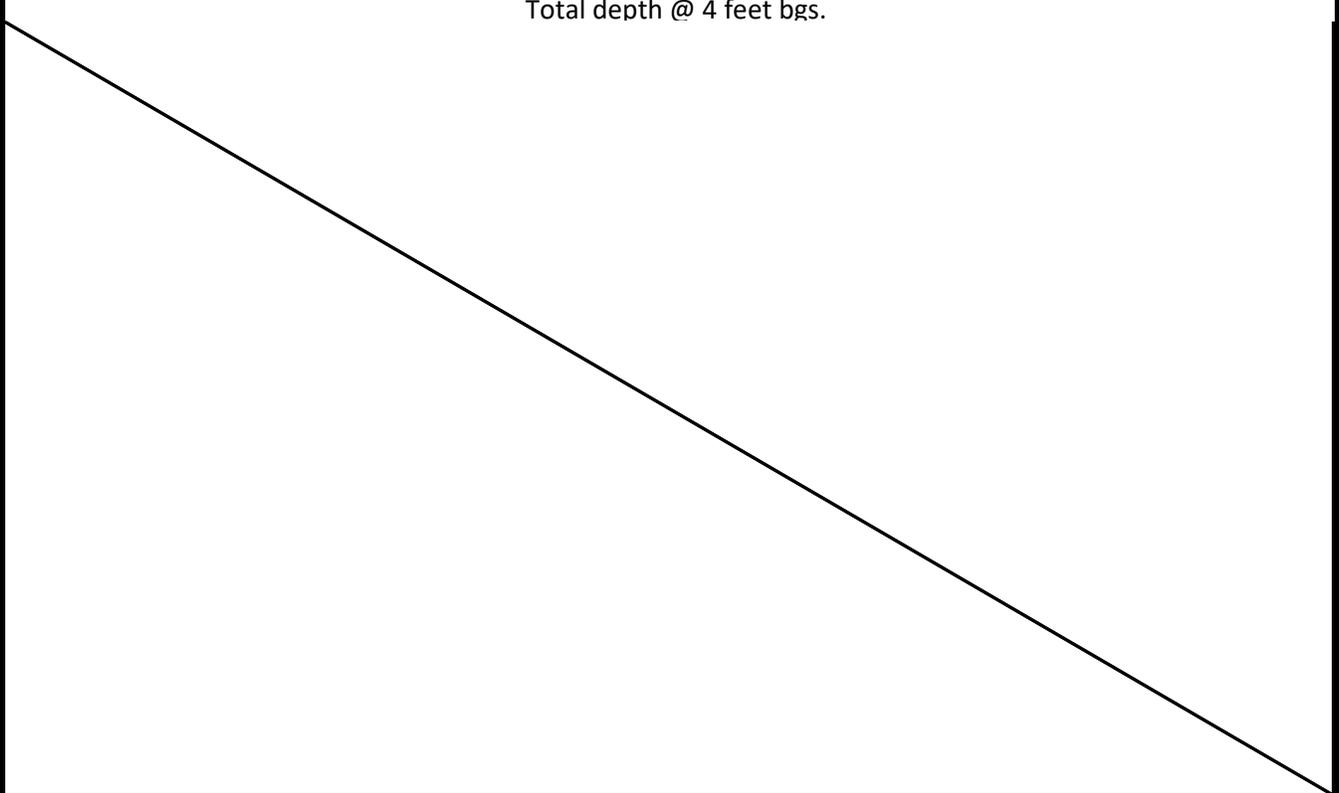


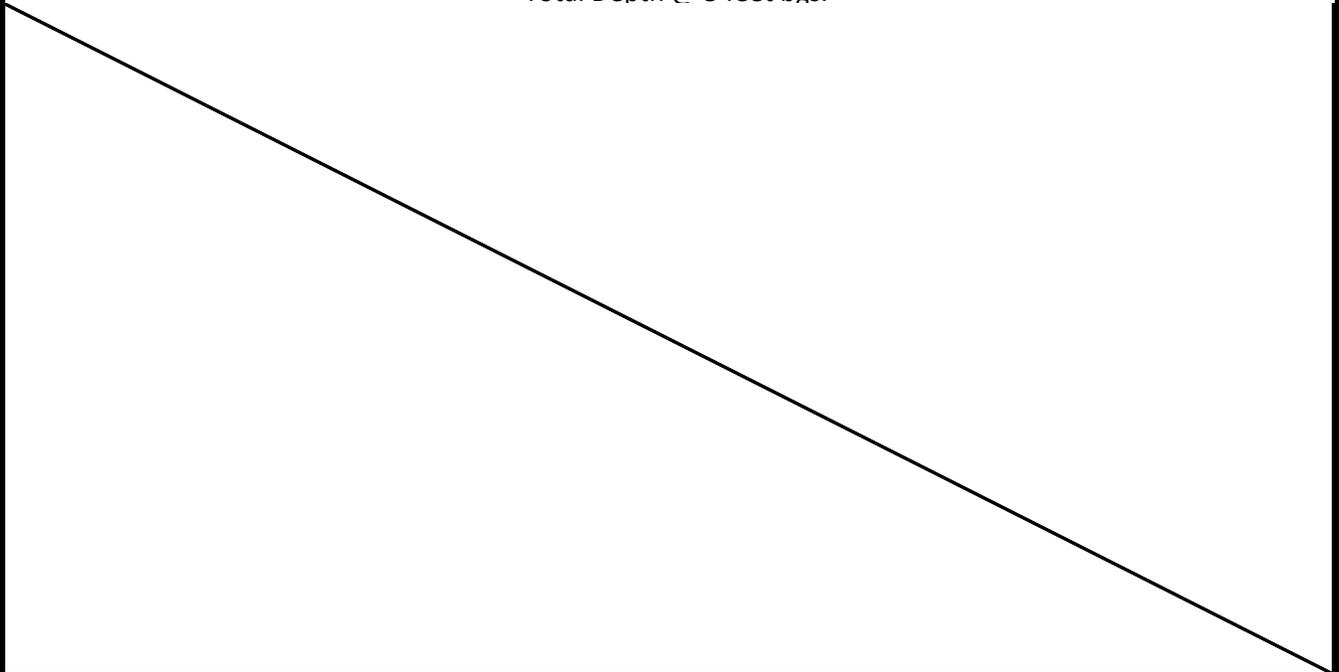


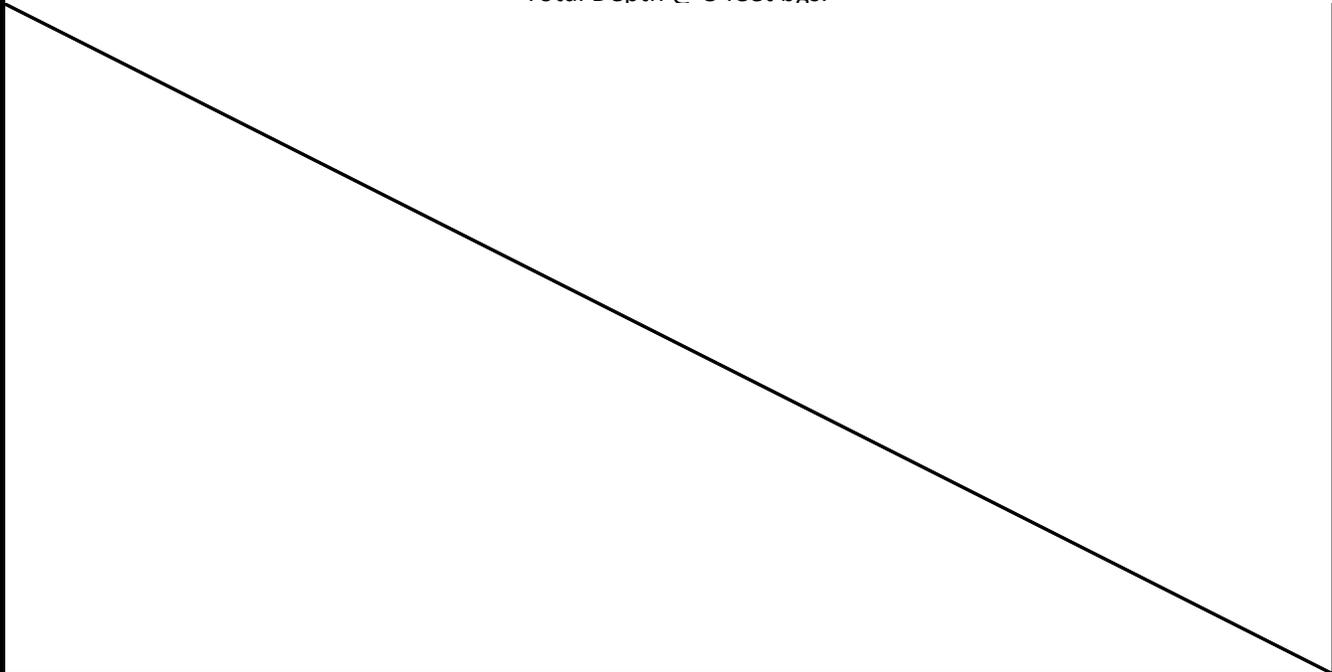
## APPENDIX C

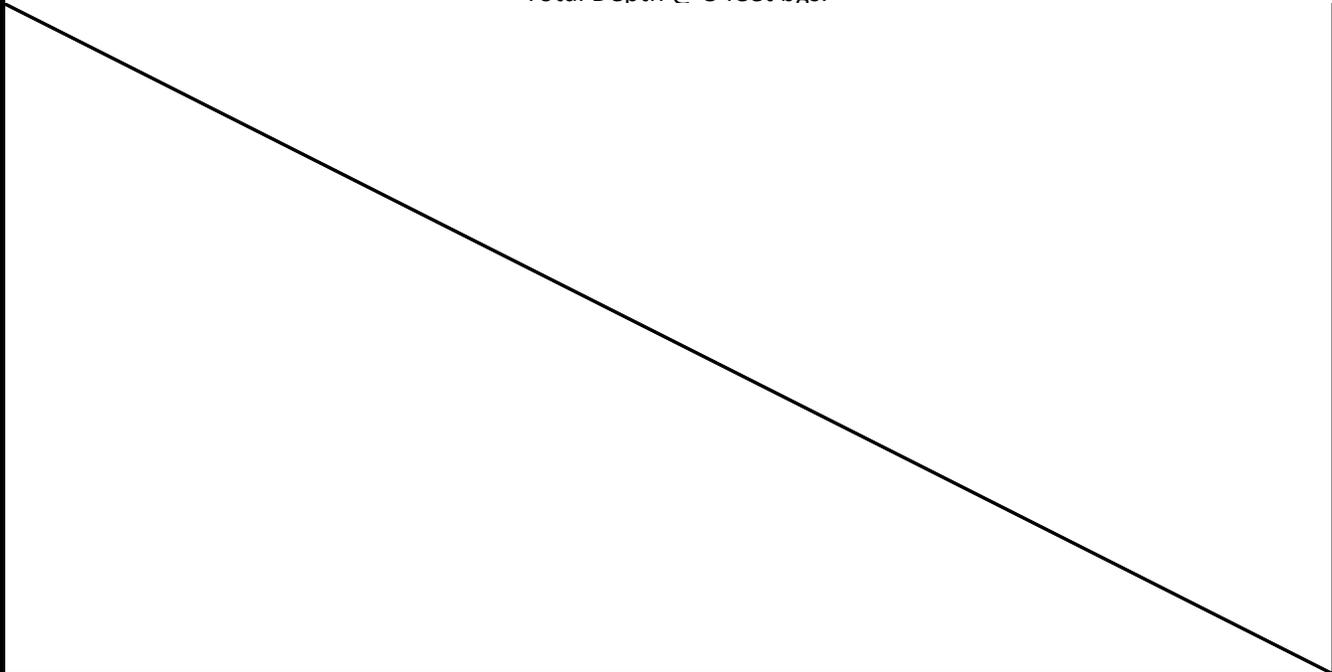
### Lithologic Soil Sampling Logs

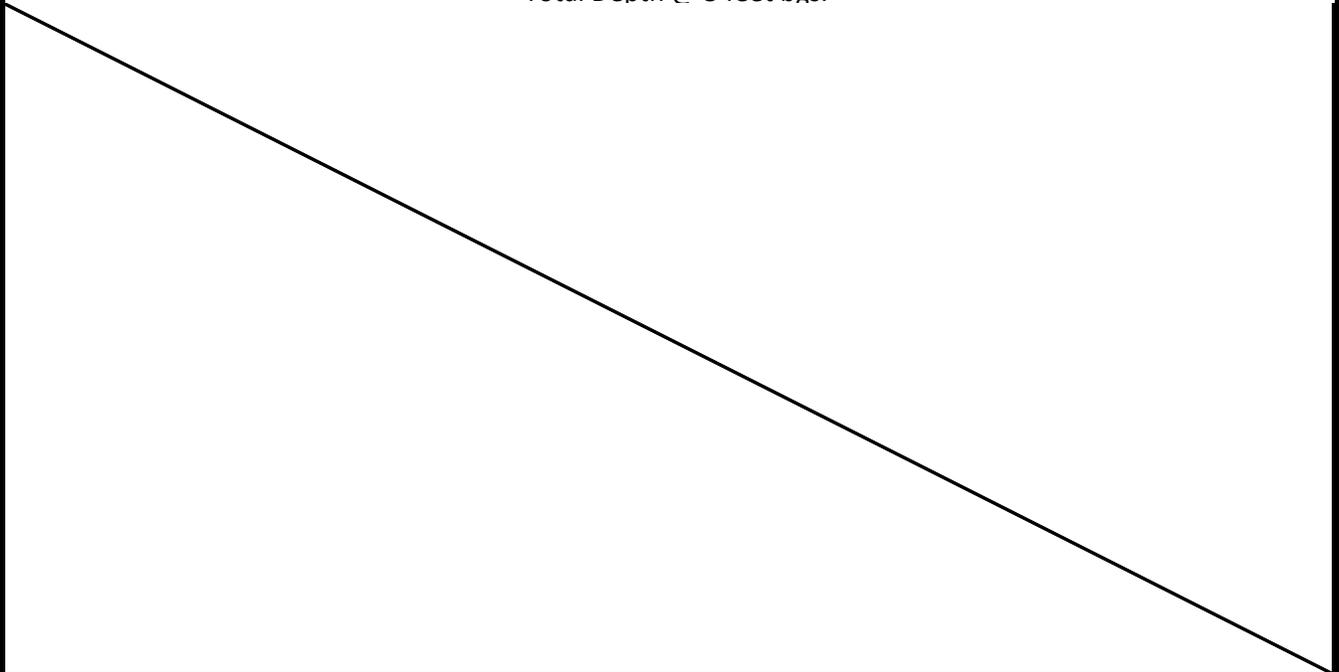
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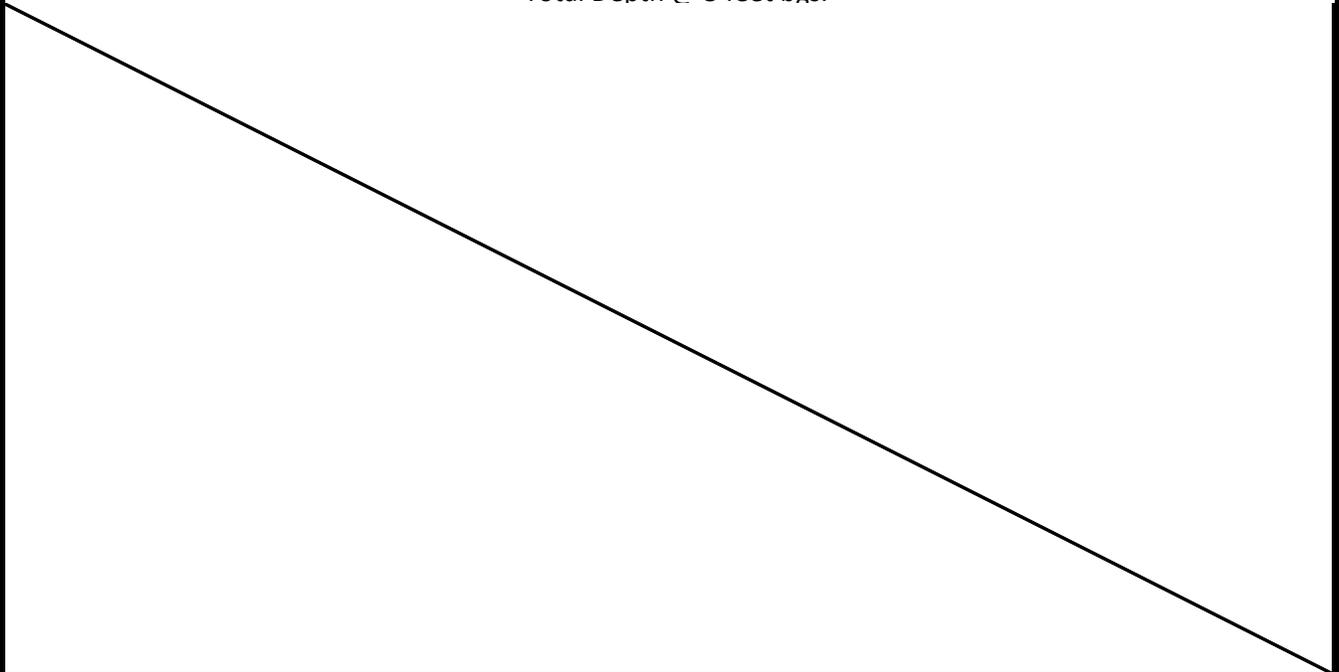
							Sample Name: PH01		Date: 7-11-24	
							Site Name: PLU Phantom Banks 20-25-31			
							Incident Number: NAPP2418355674			
							Job Number: 03C1558434			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: Connor Whitman		Method: Backhoe	
Coordinates: 32.122346, -103.806139							Hole Diameter: 2'		Total Depth: 4' bgs	
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. 40% correction factor included.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
M	17,320	256	Y	SS03	0.5	0	CCHE	CALICHE, tan sandy, with silt, moist. H/C Stain and odor.		
M	6,714	16.1	N		1	1	SP	SAND, red-brown, very fine, with little silt, moist. No stain, faint HC odor.		
M	11,575	5.4	N	PH01	2	2				
D	7,268	1.5	N		3	3	CCHE	CALICHE, tan, indurated, strong cohesion, some very fine brown sand. No stain, faint HC odor.		
D	358	0.0	N	PH01A	4	4				
Total depth @ 4 feet bgs.										
										

							Sample Name: PH02		Date: 7-11-24	
							Site Name: PLU Phantom Banks 20-25-31			
							Incident Number: NAPP2418355674			
							Job Number: 03C1558434			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: Connor Whitman		Method: Backhoe	
Coordinates: 32.122295, -103.806658							Hole Diameter: 2'		Total Depth: 5' bgs	
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. 40% correction factor included.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
M	15,926	46.0	Y	SS02	0.5	0	CCHE	CALICHE, tan sandy, with silt, moist. H/C Stain and odor.		
M	7,862	0.0	N		1	1	SP	SAND, red-brown, very fine, with little silt, moist. No stain, faint HC odor.		
M	9,178	0.0	N	PH02	2	2				
D	2,744	0.0	N		3	3	CCHE	CALICHE, tan, indurated, strong cohesion, some very fine brown sand. No stain, faint HC odor.		
D	1,825	0.0	N		4	4				
D	168	0.0	N	PH02A	5	5				
Total Depth @ 5 feet bgs.										
										

							Sample Name: PH03		Date: 7-25-24	
							Site Name: PLU Phantom Banks 20-25-31			
							Incident Number: NAPP2418355674			
							Job Number: 03C1558434			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: Connor Whitman		Method: Backhoe	
Coordinates: 32.122216, -103.806048							Hole Diameter: 2'		Total Depth: 5' bgs	
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. 40% correction factor included.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
M	<168	0.0	N	PH03	0.5	0	SP	SAND, red-brown, very fine with silt. No Stain or HC odor.		
M	<168	0.0	N		1	1				
M	<168	0.0	N		2	2				
D	<168	0.0	N	PH03A	3	3	CCHE	CALICHE, tan, indurated, strong cohesion. No Stain or HC odor.		
D	<168	0.0	N		4	4				
D	<168	0.0	N		5	5				
Total Depth @ 5 feet bgs.										
										

							Sample Name: PH04		Date: 7-25-24	
							Site Name: PLU Phantom Banks 20-25-31			
							Incident Number: NAPP2418355674			
							Job Number: 03C1558434			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: Connor Whitman		Method: Backhoe	
Coordinates: 32.122446, -103.806014							Hole Diameter: 2'		Total Depth: 5' bgs	
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. 40% correction factor included.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
M	<168	0.0	N	PH04	0.5	0	SP	SAND, red-brown, very fine with silt. No Stain or HC odor.		
M	<168	0.0	N		1	1				
M	<168	0.0	N		2	2				
D	<168	0.0	N	PH04A	3	3	CCHE	CALICHE, tan, indurated, strong cohesion. No Stain or HC odor.		
D	<168	0.0	N		4	4				
D	<168	0.0	N		5	5				
Total Depth @ 5 feet bgs.										
										

							Sample Name: PH05		Date: 7-26-24	
							Site Name: PLU Phantom Banks 20-25-31			
							Incident Number: NAPP2418355674			
							Job Number: 03C1558434			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: Connor Whitman		Method: Backhoe	
Coordinates: 32.122367, -103.806886							Hole Diameter: 2'		Total Depth: 5' bgs	
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. 40% correction factor included.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
D	<168	0.0	N	PH05	0.5	0	CCHE	CALICHE , tan, sandy. No Stain or HC odor.		
M	<168	0.0	N		1	1	SP	SAND, red-brown, very fine with silt. No Stain or HC odor.		
D	<168	0.0	N		2	2	CCHE	CALICHE, tan, indurated, strong cohesion. No Stain or HC odor.		
D	<168	0.0	N		3	3				
D	<168	0.0	N		4	4				
D	<168	0.0	N	PH05A	5	5				
Total Depth @ 5 feet bgs.										
										

						Sample Name: PH06		Date: 7-26-24	
						Site Name: PLU Phantom Banks 20-25-31			
						Incident Number: NAPP2418355674			
						Job Number: 03C1558434			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>						Logged By: Connor Whitman		Method: Backhoe	
Coordinates: 32.122284, -103.807032						Hole Diameter: 2'		Total Depth: 5' bgs	
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. 40% correction factor included.									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions	
D	<168	0.0	N	PH06	0.5	0	CCHE	CALICHE , tan, sandy. No Stain or HC odor.	
M	<168	0.0	N		1	1	SP	SAND, red-brown, very fine with silt. No Stain or HC odor.	
D	<168	0.0	N		2	2	CCHE	CALICHE, tan, indurated, strong cohesion. No Stain or HC odor.	
D	<168	0.0	N		3	3			
D	<168	0.0	N		4	4			
D	<168	0.0	N	PH06A	5	5			
Total Depth @ 5 feet bgs.									
									

					Sample Name: PH07		Date: 7-26-24	
					Site Name: PLU Phantom Banks 20-25-31			
					Incident Number: NAPP2418355674			
					Job Number: 03C1558434			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Logged By: Connor Whitman		Method: Backhoe	
Coordinates: 32.122248, -103.806903					Hole Diameter: 2'		Total Depth: 5' bgs	
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. 40% correction factor included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
M	<168	0.0	N	PH07	0.5	0	SP	SAND, red-brown, very fine with silt. No Stain or HC odor.
M	<168	0.0	N		1	1		
M	<168	0.0	N		2	2	CCHE	CALICHE, tan, indurated, strong cohesion. No Stain or HC odor.
D	<168	0.0	N		3	3		
D	<168	0.0	N	4	4			
D	<168	0.0	N	PH07A	5	5		
Total Depth @ 5 feet bgs.								



## APPENDIX D

### Laboratory Analytical Reports & Chain of Custody Documentation

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

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June 24, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU PHANTOM BANKS 20-25-31 FLOWLINE LEAK

Enclosed are the results of analyses for samples received by the laboratory on 06/18/24 14:18.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS01 0.5 (H243573-01)**

BTEX 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2024	ND	1.99	99.5	2.00	4.24	
<b>Toluene*</b>	<b>0.482</b>	0.050	06/22/2024	ND	2.08	104	2.00	4.23	
<b>Ethylbenzene*</b>	<b>0.697</b>	0.050	06/22/2024	ND	2.13	106	2.00	3.88	
<b>Total Xylenes*</b>	<b>7.32</b>	0.150	06/22/2024	ND	6.36	106	6.00	3.83	
<b>Total BTEX</b>	<b>8.50</b>	0.300	06/22/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 183 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>9330</b>	16.0	06/20/2024	ND	448	112	400	7.41	QM-07

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>453</b>	50.0	06/21/2024	ND	175	87.7	200	3.70	
<b>DRO &gt;C10-C28*</b>	<b>11700</b>	50.0	06/21/2024	ND	175	87.4	200	1.15	
<b>EXT DRO &gt;C28-C36</b>	<b>1910</b>	50.0	06/21/2024	ND					

Surrogate: 1-Chlorooctane 241 % 48.2-134

Surrogate: 1-Chlorooctadecane 244 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS02 0.5 (H243573-02)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24	
<b>Toluene*</b>	<b>0.051</b>	0.050	06/21/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88	
<b>Total Xylenes*</b>	<b>0.253</b>	0.150	06/21/2024	ND	6.36	106	6.00	3.83	
<b>Total BTEX</b>	<b>0.305</b>	0.300	06/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 133 % 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
<b>Chloride</b>	<b>12000</b>	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>10.0</b>	10.0	06/20/2024	ND	175	87.7	200	3.70	
<b>DRO &gt;C10-C28*</b>	<b>855</b>	10.0	06/20/2024	ND	175	87.4	200	1.15	
<b>EXT DRO &gt;C28-C36</b>	<b>163</b>	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 77.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS03 0.5 (H243573-03)**

BTEX 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	06/22/2024	ND	1.99	99.5	2.00	4.24	
<b>Toluene*</b>	<b>3.51</b>	0.100	06/22/2024	ND	2.08	104	2.00	4.23	
<b>Ethylbenzene*</b>	<b>2.40</b>	0.100	06/22/2024	ND	2.13	106	2.00	3.88	
<b>Total Xylenes*</b>	<b>23.6</b>	0.300	06/22/2024	ND	6.36	106	6.00	3.83	
<b>Total BTEX</b>	<b>29.5</b>	0.600	06/22/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 145 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>12000</b>	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>390</b>	50.0	06/21/2024	ND	175	87.7	200	3.70	
<b>DRO &gt;C10-C28*</b>	<b>10400</b>	50.0	06/21/2024	ND	175	87.4	200	1.15	
<b>EXT DRO &gt;C28-C36</b>	<b>1960</b>	50.0	06/21/2024	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 253 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS04 0.5 (H243573-04)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>4.70</b>	1.00	06/21/2024	ND	1.99	99.5	2.00	4.24	
<b>Toluene*</b>	<b>48.0</b>	1.00	06/21/2024	ND	2.08	104	2.00	4.23	
<b>Ethylbenzene*</b>	<b>14.0</b>	1.00	06/21/2024	ND	2.13	106	2.00	3.88	
<b>Total Xylenes*</b>	<b>111</b>	3.00	06/21/2024	ND	6.36	106	6.00	3.83	
<b>Total BTEX</b>	<b>177</b>	6.00	06/21/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>7860</b>	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>3560</b>	50.0	06/21/2024	ND	175	87.7	200	3.70		
<b>DRO &gt;C10-C28*</b>	<b>28200</b>	50.0	06/21/2024	ND	175	87.4	200	1.15		
<b>EXT DRO &gt;C28-C36</b>	<b>5560</b>	50.0	06/21/2024	ND						

Surrogate: 1-Chlorooctane 497 % 48.2-134

Surrogate: 1-Chlorooctadecane 646 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS05 0.5 (H243573-05)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24	
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88	
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83	
Total BTEX	<0.300	0.300	06/21/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	175	87.7	200	3.70	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	175	87.4	200	1.15	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 76.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS06 0.5 (H243573-06)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24	
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88	
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83	
Total BTEX	<0.300	0.300	06/21/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	175	87.7	200	3.70	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	175	87.4	200	1.15	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 76.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS07 0.5 (H243573-07)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24		
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	175	87.7	200	3.70		
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	175	87.4	200	1.15		
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND						

Surrogate: 1-Chlorooctane 71.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 68.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS08 0.5 (H243573-08)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24		
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83		
Total BTEX	<0.300	0.300	06/21/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/21/2024	ND	175	87.7	200	3.70		
DRO >C10-C28*	<10.0	10.0	06/21/2024	ND	175	87.4	200	1.15		
EXT DRO >C28-C36	<10.0	10.0	06/21/2024	ND						

Surrogate: 1-Chlorooctane 73.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 71.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS09 0.5 (H243573-09)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24	
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88	
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83	
Total BTEX	<0.300	0.300	06/21/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 76.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 72.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS10 0.5 (H243573-10)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24	
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88	
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83	
Total BTEX	<0.300	0.300	06/21/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 77.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 72.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS11 0.5 (H243573-11)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24	
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88	
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83	
Total BTEX	<0.300	0.300	06/21/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 78.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 71.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
\*\* Samples not received at proper temperature of 6°C or below.
\*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

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

1 of 2

Company Name: Ensolum, LLC		<b>BILL TO</b>		ANALYSIS REQUEST	
Project Manager: David McInnis dmclnns@ensolum.com		P.O. #:			
Address: 3122 National Parks Hwy		Company: XTO Energy Inc.			
City: Carlsbad		Attn: Amy Ruth			
Phone #: 337 257-8307		Address: 3104 E. Green St.			
Project #: 03C1558434		City: Carlsbad			
Project Name: PLU Phantom Banks 20-25-31 Flowline Leak		State: NM Zip: 88220			
Project Location:		Phone #:			
Sampler Name: Connor Whitman		Fax #:			

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:					
HT243573	5501	0.5	G	1							6-11-24	955				
	5502															
	5503															
	5504															
	5505															
	5506															
	5507															
	5508															
	5509															
	5510															

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

Relinquished By: <i>Chh</i>	Date: 11-18-24	Received By: <i>AP</i>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:
Time: 1:18			All Results are emailed. Please provide Email address:
Date:			dbell@ensolum.com, TMorrissey@ensolum.com, dmclnns@ensolum.com
Time:			REMARKS:
			Cost Center: 1081581001 Incident ID: PENDING

Delivered By: (Circle One)	Observed Temp. °C	Sample Condition	CHECKED BY: (Initials)	Turnaround Time:	Standard	Bacteria (only)	Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	<i>AP</i>	<i>AP 11/18/24 #113</i>	<input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	Observed Temp. °C
				Correction Factor: <i>-0.5°C</i>			Corrected Temp. °C

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 2

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Ensolum, LLC		P.O. #:	
Project Manager: David McInnis dmclinnis@ensolum.com		Company: XTO Energy Inc.	
Address: 3122 National Parks Hwy		Attn: Amy Ruth	
City: Carlsbad	State: NM	Zip: 88220	Address: 3104 E. Green St.
Phone #: 337 257-8307	Fax #:	City: Carlsbad	State: NM
Project #: 03C1558434	Project Owner: XTO	Zip: 88220	Phone #:
Project Name: PLU Phantom Banks 20-25-31 Flowline Leak	Project Location:	Fax #:	
Sampler Name: Connor Whitman			

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
A7243573	5511	05	G	1							6-14-29	1045			

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Relinquished By: *ctw* Date: *6-18-24* Time: *1:18*

Received By: *ADP* Date: *6-18-24* Time: *1:18*

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Turnaround Time: *Standard*  *Rush*

Cost Center: 1081581001 Incident ID: PENDING

Verbal Result:  Yes  No  Add'l Phone #:

All Results are emailed. Please provide Email address: *bbeill@ensolum.com, TMorrissey@ensolum.com, dmclinnis@ensolum.com*

Delivered By: (Circle One)  UPS  Bus  Other: \_\_\_\_\_

Observed Temp. °C: *0.1* Corrected Temp. °C: \_\_\_\_\_

Sample Condition:  Intact  Cool  Yes  No

Checked By: *ADP*

Turnaround Time: *6-18-24* #TT3 *140*

Correction Factor: *0.5°C*

Bacteria (only) Sample Condition:  Cool  Intact  Yes  No

Corrected Temp. °C: \_\_\_\_\_

† Cardinal cannot accept verbal changes. Please email changes to [celej.keeney@cardinallabsnm.com](mailto:celej.keeney@cardinallabsnm.com)



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

---

July 22, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU PHANTOM BANKS 20-25-31 FLOWLINE LEAK

Enclosed are the results of analyses for samples received by the laboratory on 07/16/24 13:25.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	07/16/2024	Sampling Date:	07/11/2024
Reported:	07/22/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 01 2' (H244231-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/17/2024	ND	1.97	98.5	2.00	4.05	
Toluene*	<0.050	0.050	07/17/2024	ND	2.14	107	2.00	3.45	
Ethylbenzene*	<0.050	0.050	07/17/2024	ND	2.20	110	2.00	3.02	
Total Xylenes*	<0.150	0.150	07/17/2024	ND	6.83	114	6.00	2.91	
Total BTEX	<0.300	0.300	07/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	3480	16.0	07/16/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/17/2024	ND	206	103	200	5.27	
DRO >C10-C28*	<10.0	10.0	07/17/2024	ND	179	89.4	200	7.62	
EXT DRO >C28-C36	<10.0	10.0	07/17/2024	ND					

Surrogate: 1-Chlorooctane 97.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/16/2024	Sampling Date:	07/11/2024
Reported:	07/22/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 01 A 4' (H244231-02)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/17/2024	ND	1.97	98.5	2.00	4.05	
Toluene*	<0.050	0.050	07/17/2024	ND	2.14	107	2.00	3.45	
Ethylbenzene*	<0.050	0.050	07/17/2024	ND	2.20	110	2.00	3.02	
Total Xylenes*	<0.150	0.150	07/17/2024	ND	6.83	114	6.00	2.91	
Total BTEX	<0.300	0.300	07/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>272</b>	16.0	07/16/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/17/2024	ND	206	103	200	5.27	
<b>DRO &gt;C10-C28*</b>	<b>18.9</b>	10.0	07/17/2024	ND	179	89.4	200	7.62	
EXT DRO >C28-C36	<10.0	10.0	07/17/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 130 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/16/2024	Sampling Date:	07/11/2024
Reported:	07/22/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 02 2' (H244231-03)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/17/2024	ND	1.97	98.5	2.00	4.05	
Toluene*	<0.050	0.050	07/17/2024	ND	2.14	107	2.00	3.45	
Ethylbenzene*	<0.050	0.050	07/17/2024	ND	2.20	110	2.00	3.02	
Total Xylenes*	<0.150	0.150	07/17/2024	ND	6.83	114	6.00	2.91	
Total BTEX	<0.300	0.300	07/17/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6000	16.0	07/17/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/17/2024	ND	206	103	200	5.27	
DRO >C10-C28*	<10.0	10.0	07/17/2024	ND	179	89.4	200	7.62	
EXT DRO >C28-C36	<10.0	10.0	07/17/2024	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 136 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/16/2024	Sampling Date:	07/11/2024
Reported:	07/22/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 02 A 5' (H244231-04)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/17/2024	ND	1.97	98.5	2.00	4.05	
Toluene*	<0.050	0.050	07/17/2024	ND	2.14	107	2.00	3.45	
Ethylbenzene*	<0.050	0.050	07/17/2024	ND	2.20	110	2.00	3.02	
Total Xylenes*	<0.150	0.150	07/17/2024	ND	6.83	114	6.00	2.91	
Total BTEX	<0.300	0.300	07/17/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	07/17/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/17/2024	ND	206	103	200	5.27	
DRO >C10-C28*	<10.0	10.0	07/17/2024	ND	179	89.4	200	7.62	
EXT DRO >C28-C36	<10.0	10.0	07/17/2024	ND					

Surrogate: 1-Chlorooctane 93.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

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

1 of 1

<b>Company Name:</b> Ensolum, LLC	<b>P.O. #:</b>
<b>Project Manager:</b> David Mcinnis	<b>Company:</b> XTO Energy Inc.
<b>Address:</b> 3122 National Parks Hwy	<b>Attn:</b> Amy Ruth
<b>City:</b> Carlsbad	<b>Address:</b> 3104 E. Green St.
<b>State:</b> NM	<b>City:</b> Carlsbad
<b>Zip:</b> 88220	<b>State:</b> NM
<b>Phone #:</b> 337 257-8307	<b>Zip:</b> 88220
<b>Fax #:</b>	<b>Phone #:</b>
<b>Project #:</b> 03C1558434	<b>Project Owner:</b> XTO
<b>Project Name:</b> PLU Phantom Banks 20-25-31 Flowline Leak	
<b>Project Location:</b>	
<b>Sampler Name:</b> Connor Whitman	

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H44831	PH01	2	G	1							7-11-24	1150	/	/	/
	PH01A	4										1205	/	/	/
	PH02	2										1235	/	/	/
	PH02A	5										1250	/	/	/
CM															

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.

<b>Relinquished By:</b> <i>[Signature]</i>	<b>Date:</b> 7-10-24	<b>Received By:</b> <i>[Signature]</i>
<b>Time:</b> 1325		
<b>Date:</b>		
<b>Time:</b>		

<b>Delivered By: (Circle One)</b>	<b>Observed Temp. °C</b>	<b>Sample Condition</b>	<b>CHECKED BY:</b>	<b>Turnaround Time:</b>	<b>Standard</b>	<b>Bacteria (only)</b>	<b>Sample Condition</b>
Sampler - UPS - Bus - Other:	2.4°C	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	<i>[Signature]</i>	AP 7-14-24	Rush	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	Observed Temp. °C
	Corrected Temp. °C			Correction Factor: 0.5°C			Corrected Temp. °C



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

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August 02, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU PHANTOM BANKS 20-25-31 FLOWLINE LEAK

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

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 01 5' (H244527-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 02 5' (H244527-02)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>144</b>	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
<b>DRO &gt;C10-C28*</b>	<b>14.1</b>	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 128 % 48.2-134

Surrogate: 1-Chlorooctadecane 139 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 03 4' (H244527-03)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 123 % 48.2-134

Surrogate: 1-Chlorooctadecane 132 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 04 4' (H244527-04)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 134 % 48.2-134

Surrogate: 1-Chlorooctadecane 145 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 05 4' (H244527-05)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 123 % 48.2-134

Surrogate: 1-Chlorooctadecane 132 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 06 4' (H244527-06)**

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	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 07 4' (H244527-07)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 116 % 48.2-134

Surrogate: 1-Chlorooctadecane 124 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 08 4' (H244527-08)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 130 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SW 01 0-4' (H244527-09)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 130 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SW 02 0-4' (H244527-10)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>144</b>	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 136 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SW 03 0-4' (H244527-11)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SW 04 0-4' (H244527-12)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>128</b>	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 119 % 48.2-134

Surrogate: 1-Chlorooctadecane 131 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 03 0.5' (H244527-13)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 129 % 48.2-134

Surrogate: 1-Chlorooctadecane 142 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 03A 5' (H244527-14)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 99.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 124 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 04 0.5' (H244527-15)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02		
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64		
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06		
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67		
Total BTEX	<0.300	0.300	07/31/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/31/2024	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32		
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570		
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND						

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 140 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/25/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 04A 5' (H244527-16)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 97.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 09 4' (H244527-17)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>128</b>	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
<b>DRO &gt;C10-C28*</b>	<b>10.6</b>	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 148 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 10 4' (H244527-18)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 134 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 11 4' (H244527-19)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>112</b>	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/01/2024	ND	209	104	200	2.32	
<b>DRO &gt;C10-C28*</b>	<b>12.1</b>	10.0	08/01/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	08/01/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 139 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 12 4' (H244527-20)**

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

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 140 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 13 4' (H244527-21)**

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

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 139 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 14 4' (H244527-22)**

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

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 142 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 15 4' (H244527-23)**

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

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
<b>DRO &gt;C10-C28*</b>	<b>41.1</b>	10.0	07/31/2024	ND	179	89.4	200	0.570	
<b>EXT DRO &gt;C28-C36</b>	<b>12.8</b>	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 137 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 16 4' (H244527-24)**

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

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 148 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



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

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

1 of 3

**Company Name:** Ensolum, LLC  
**Project Manager:** David McInnis  
**Address:** 3122 National Parks Hwy  
**City:** Carlsbad **State:** NM **zip:** 88220  
**Phone #:** 337 257-8307 **Fax #:**  
**Project #:** 03C1558434 **Project Owner:** XTO  
**Project Name:** PLU Phantom Banks 20-25-31 Flowline Leak  
**Project Location:**  
**Sampler Name:** Connor Whitman

**BILL TO**  
**P.O. #:**  
**Company:** XTO Energy Inc.  
**Attn:** Amy Ruth  
**Address:** 3104 E. Green St.  
**City:** Carlsbad  
**State:** NM **zip:** 88220  
**Phone #:**  
**Fax #:**

**ANALYSIS REQUEST**

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H244587	FS01	5	C1	1							7-25-24	1120			
	FS02	5										1125			
	FS03	4										1130			
	FS04	4										1135			
	FS05	4										1140			
	FS06	4										1145			
	FS07	4										1150			
	FS08	4										1155			
	SV01	0-4										1200			
	SV02	0-4										1205			

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**Relinquished By:** [Signature] **Date:** 1-30-24  
**Received By:** [Signature] **Date:** 1-30-24  
**Relinquished By:** [Signature] **Date:** 1-30-24  
**Received By:** [Signature] **Date:** 1-30-24

**Turnaround Time:** Standard  Rush   
**Thermometer ID:** #449 **Correction Factor:** 0.5°C **Standard**  **Rush**   
**Turnaround Time:** Standard  Rush   
**Thermometer ID:** #449 **Correction Factor:** 0.5°C **Standard**  **Rush**

**Delivered By:** (Circle One)  UPS  Bus  Other: \_\_\_\_\_  
**Observed Temp. °C:** 14.5 **Corrected Temp. °C:** 14.5  
**Sample Condition:** Cool  Intact   
**Checked By:** [Signature] **Incident ID:** NAPP2418355674  
**Remarks:** Please send copy of signed COC to: cwhitman@ensolum.com  
**Cost Center:** 1081581001  
**Incident ID:** NAPP2418355674  
**Cardinal cannot accept verbal changes. Please email changes to cely.keene@cardinallabsnm.com**



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

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

2 of 3

**Company Name:** Ensolum, LLC  
**Project Manager:** David McInnis  
**Address:** 3122 National Parks Hwy  
**City:** Carlsbad **State:** NM **Zip:** 88220  
**Phone #:** 337 257-8307 **Fax #:**  
**Project #:** 03C1558434 **Project Owner:** XTO  
**Project Name:** PLU Phantom Banks 20-25-31 Flowline Leak  
**Project Location:**  
**Sampler Name:** Connor Whitman

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.	DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :						
H2445287	SU03	0-4	C	1								7-25-24	1210			
	SU04	0-4	C	1									1215			
	PH03	0.5	C	1									1300			
	PH03A	5	G	1									1325			
	PH04	0.5											1355			
	PH04A	5											1420			
	FS09	4	C									7-26-24	1005			
	FS10	4											1010			
	FS11	4											1015			
	FS12	4											1020			

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**Relinquished By:** [Signature] **Date:** 7-25-24  
**Received By:** [Signature] **Date:** 7-25-24  
**Time:** 10:25

**Delivered By:** (Circle One) **Observer Temp. °C:** 14.4  
**Sampler - UPS - Bus - Other:** **Corrected Temp. °C:** [Blank]  
**Sample Condition:** Cool  Intact  Bacteria (only)  Sample Condition Cool  Intact  Observed Temp. °C  Yes  No  Yes  No  No  No  No  
**Checked By:** [Signature] **Turnaround Time:** Standard  Rush   
**Thermometer ID #444** **Correction Factor -0.5°C** **7/22**  
**Remarks:** Cost Center: 1081581001 Incident ID: NAPP2418355674  
 Please send copy of signed COC to: cwhitman@ensolum.com  
**Verbal Result:**  Yes  No **Add'l Phone #:**  
**All Results are emailed. Please provide Email address:** bbeill@ensolum.com, T Morrissey@ensolum.com, dmchinis@ensolum.com

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3 of 3

Company Name: Ensolum, LLC  
Project Manager: David McInnis

P.O. #: **BILL TO**  
Company: XTO Energy Inc.  
Attn: Amy Ruth

ANALYSIS REQUEST

Address: 3122 National Parks Hwy  
City: Carlsbad State: NM Zip: 88220

Phone #: 337 257-8307 Fax #:

Address: 3104 E. Green St.  
City: Carlsbad State: NM Zip: 88220

Project #: 03C1558434 Project Owner: XTO

Project Name: PLU Phantom Banks 20-25-31 Flowline Leak

Project Location:

Sampler Name: Connor Whitman

Phone #:

Fax #:

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
444527	F513	4	C								7-2624	1020			
	F514	4										1035			
	F515	4										1040			
	F516	4													

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Verbal Result:  Yes  No Add'l Phone #:  
All Results are emailed. Please provide Email address:  
Remarks: Cost Center: 1081581001 Incident ID: NAPP2418355674

Relinquished By: AW  
Date: 7/25/24  
Time: 10:25

Received By: AW  
Date: 7/25/24  
Time: 10:25

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

Observed Temp.: 14.5°C  
Corrected Temp.: 14.5°C

Sample Condition  
Cool Intact  Yes  No  
Cool Intact  Yes  No

CHECKED BY: AW  
Turnaround Time: Standard  Rush   
Thermometer ID: 444 Correction Factor: 0.0°C  
Bacteria (only) Sample Condition  
Cool Intact  Yes  No  
Cool Intact  Yes  No

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



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August 02, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU PHANTOM BANKS 20-25-31 FLOWLINE LEAK

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

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 05 0.5' (H244529-01)**

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

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	<b>112</b>	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/01/2024	ND	209	104	200	2.32	
<b>DRO &gt;C10-C28*</b>	<b>12.8</b>	10.0	08/01/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	08/01/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 136 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 05A 5' (H244529-02)**

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

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/01/2024	ND	209	104	200	2.32	
<b>DRO &gt;C10-C28*</b>	<b>17.2</b>	10.0	08/01/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	08/01/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 142 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 06 0.5' (H244529-03)**

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

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>112</b>	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/01/2024	ND	209	104	200	2.32	
<b>DRO &gt;C10-C28*</b>	<b>23.4</b>	10.0	08/01/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	08/01/2024	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 64.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 06A 5' (H244529-04)**

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

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>112</b>	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/01/2024	ND	209	104	200	2.32	
<b>DRO &gt;C10-C28*</b>	<b>15.7</b>	10.0	08/01/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	08/01/2024	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 07 0.5' (H244529-05)**

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

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 147 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	07/30/2024	Sampling Date:	07/26/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: PH 07A 5' (H244529-06)**

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

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	07/31/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	209	104	200	2.32	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	179	89.4	200	0.570	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 91.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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\*=Accredited Analyte

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1 of 1

BILL TO

ANALYSIS REQUEST

Company Name: Ensolum, LLC  
 Project Manager: David McInnis  
 Address: 3122 National Parks Hwy  
 City: Carlsbad State: NM Zip: 88220  
 Phone #: 337 257-8307 Fax #:   
 Project #: 03C1558434 Project Owner: XTO  
 Project Name: PLU Phantom Banks 20-25-31 Flowline Leak  
 Project Location:   
 Sampler Name: Connor Whitman  
 P.O. #:   
 Company: XTO Energy Inc.  
 Attn: Amy Ruth  
 Address: 3104 E. Green St.  
 City: Carlsbad  
 State: NM Zip: 88220  
 Phone #:   
 Fax #:

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
1	PH05	0.5	(G)	1							7-26-24	1100			
2	PH05A	5										1125			
3	PH0C	0.5										1205			
4	PH06A	5										1230			
5	PH07	0.5										1330			
6	PH07A	5										1355			

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Relinquished By: *AMK*  
 Date: 12/24/24  
 Time: 1425  
 Received By: *ADP*  
 Date:   
 Time:   
 Verbal Result:  Yes  No  Add'l Phone #:   
 All Results are emailed. Please provide Email address:   
 REMARKS: Cost Center: 1081581001 Incident ID: NAPP2418355674  
 Please send copy of signed COC to: cwhitman@ensolum.com  
 Turnaround Time: Standard  Rush   
 Thermometer ID #448-4740  
 Corrosion Factor:  Yes  No  No

Delivered By: (Circle One) Observed Temp. °C: 14°C Corrected Temp. °C:   
 Sample Condition:  Cool  Intact  Yes  No  No  No  
 CHECKED BY: (Initials) *ADP*  
 Bacteria (only) Sample Condition:  Cool  Intact  Yes  No  No  No  
 Corrected Temp. °C:

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



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

September 25, 2024

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU PHANTOM BANKS 20-25-31 FLOWLINE LEAK

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

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

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

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

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

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

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

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS 20 1'	H245463-01	Soil	05-Sep-24 10:35	10-Sep-24 13:00
FS 21 1'	H245463-02	Soil	05-Sep-24 10:40	10-Sep-24 13:00
SW 05 0-1'	H245463-03	Soil	05-Sep-24 11:00	10-Sep-24 13:00
FS 22 2'	H245463-04	Soil	05-Sep-24 12:10	10-Sep-24 13:00
SW 06 0-2'	H245463-05	Soil	05-Sep-24 12:20	10-Sep-24 13:00

09/25/24 - Client changed the sample IDs on -01, -02 and -04 (see COC). This is the revised report and will replace the one sent on 09/12/24.

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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
--	--	------------------------------

**FS 20 1'  
H245463-01 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>320</b>		16.0	mg/kg	4	4091119	HM	11-Sep-24	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091031	JH	11-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			99.9 %		71.5-134	4091031	JH	11-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	

Surrogate: 1-Chlorooctane			93.2 %		48.2-134	4091029	MS	11-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			91.6 %		49.1-148	4091029	MS	11-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
--	--	------------------------------

**FS 21 1'**  
**H245463-02 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>272</b>		16.0	mg/kg	4	4091119	HM	11-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091031	JH	11-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			102 %	71.5-134		4091031	JH	11-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
<b>DRO &gt;C10-C28*</b>	<b>50.1</b>		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
<b>EXT DRO &gt;C28-C36</b>	<b>13.7</b>		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	

Surrogate: 1-Chlorooctane			95.7 %	48.2-134		4091029	MS	11-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			95.7 %	49.1-148		4091029	MS	11-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
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**SW 05 0-1'  
H245463-03 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>288</b>		16.0	mg/kg	4	4091119	HM	11-Sep-24	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091031	JH	11-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			101 %	71.5-134		4091031	JH	11-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
<b>DRO &gt;C10-C28*</b>	<b>61.7</b>		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
<b>EXT DRO &gt;C28-C36</b>	<b>15.5</b>		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	

Surrogate: 1-Chlorooctane			94.8 %	48.2-134		4091029	MS	11-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			93.4 %	49.1-148		4091029	MS	11-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
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**FS 22 2'  
H245463-04 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>64.0</b>		16.0	mg/kg	4	4091119	HM	11-Sep-24	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091031	JH	11-Sep-24	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			99.6 %	71.5-134		4091031	JH	11-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	

<i>Surrogate: 1-Chlorooctane</i>			89.2 %	48.2-134		4091029	MS	11-Sep-24	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			87.2 %	49.1-148		4091029	MS	11-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
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**SW 06 0-2'  
H245463-05 (Soil)**

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

**Inorganic Compounds**

Chloride	64.0		16.0	mg/kg	4	4091119	HM	11-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091031	JH	11-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091031	JH	11-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			98.2 %	71.5-134		4091031	JH	11-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091029	MS	11-Sep-24	8015B	

Surrogate: 1-Chlorooctane			100 %	48.2-134		4091029	MS	11-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			98.1 %	49.1-148		4091029	MS	11-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
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**Inorganic Compounds - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4091119 - 1:4 DI Water</b>										
<b>Blank (4091119-BLK1)</b>										
Prepared & Analyzed: 11-Sep-24										
Chloride	ND	16.0	mg/kg							
<b>LCS (4091119-BS1)</b>										
Prepared & Analyzed: 11-Sep-24										
Chloride	400	16.0	mg/kg	400		100	80-120			
<b>LCS Dup (4091119-BSD1)</b>										
Prepared & Analyzed: 11-Sep-24										
Chloride	416	16.0	mg/kg	400		104	80-120	3.92	20	

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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
--	--	------------------------------

**Volatile Organic Compounds by EPA Method 8021 - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4091031 - Volatiles**

**Blank (4091031-BLK1)**

Prepared: 10-Sep-24 Analyzed: 11-Sep-24

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0502		mg/kg	0.0500		100	71.5-134			

**LCS (4091031-BS1)**

Prepared: 10-Sep-24 Analyzed: 11-Sep-24

Benzene	1.95	0.050	mg/kg	2.00		97.4	82.8-130			
Toluene	1.88	0.050	mg/kg	2.00		93.8	86-128			
Ethylbenzene	1.86	0.050	mg/kg	2.00		92.9	85.9-128			
m,p-Xylene	3.72	0.100	mg/kg	4.00		92.9	89-129			
o-Xylene	1.82	0.050	mg/kg	2.00		90.8	86.1-125			
Total Xylenes	5.53	0.150	mg/kg	6.00		92.2	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0499		mg/kg	0.0500		99.8	71.5-134			

**LCS Dup (4091031-BSD1)**

Prepared: 10-Sep-24 Analyzed: 11-Sep-24

Benzene	1.97	0.050	mg/kg	2.00		98.4	82.8-130	0.997	15.8	
Toluene	1.90	0.050	mg/kg	2.00		94.9	86-128	1.22	15.9	
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.5	85.9-128	1.69	16	
m,p-Xylene	3.79	0.100	mg/kg	4.00		94.8	89-129	1.99	16.2	
o-Xylene	1.85	0.050	mg/kg	2.00		92.6	86.1-125	1.91	16.7	
Total Xylenes	5.64	0.150	mg/kg	6.00		94.0	88.2-128	1.96	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0507		mg/kg	0.0500		101	71.5-134			

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: TRACY HILLARD Fax To:	Reported: 25-Sep-24 08:42
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**Petroleum Hydrocarbons by GC FID - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4091029 - General Prep - Organics**

**Blank (4091029-BLK1)** Prepared: 10-Sep-24 Analyzed: 11-Sep-24

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	52.6		mg/kg	50.0		105	48.2-134			
Surrogate: 1-Chlorooctadecane	52.9		mg/kg	50.0		106	49.1-148			

**LCS (4091029-BS1)** Prepared: 10-Sep-24 Analyzed: 11-Sep-24

GRO C6-C10	189	10.0	mg/kg	200		94.3	66.4-123			
DRO >C10-C28	185	10.0	mg/kg	200		92.6	66.5-118			
Total TPH C6-C28	374	10.0	mg/kg	400		93.5	77.6-123			
Surrogate: 1-Chlorooctane	54.7		mg/kg	50.0		109	48.2-134			
Surrogate: 1-Chlorooctadecane	53.2		mg/kg	50.0		106	49.1-148			

**LCS Dup (4091029-BSD1)** Prepared: 10-Sep-24 Analyzed: 11-Sep-24

GRO C6-C10	200	10.0	mg/kg	200		100	66.4-123	5.78	17.7	
DRO >C10-C28	196	10.0	mg/kg	200		98.1	66.5-118	5.80	21	
Total TPH C6-C28	396	10.0	mg/kg	400		99.0	77.6-123	5.79	18.5	
Surrogate: 1-Chlorooctane	59.8		mg/kg	50.0		120	48.2-134			
Surrogate: 1-Chlorooctadecane	57.9		mg/kg	50.0		116	49.1-148			

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensulum, LLC  
Project Manager: Tracy Hillard

Address: 3122 National Parks Hwy  
City: Carlsbad  
Phone #: 337 257-8307  
State: NM Zip: 88220

Project #: 03C1558434  
Project Owner: XTO

Project Name: PLU Phantom Banks 20-25-31 Flowline Leak  
Project Location:

Sampler Name: Connor Whitman  
FOR LAB USE ONLY

BILL TO

P.O. #:  
Company: XTO Energy Inc.  
Attn: Amy Ruth  
Address: 3104 E. Green St.  
City: Carlsbad  
State: NM Zip: 88220

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							PRESERV.	DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:						
1425423	* F520	1'	C	1								9-5-24	1035				
2	F521	1'	C	1									1040				
3	SMOS	0-1'											1100				
4	F522	2'											1210				
5	SWOE	0-2'											1220				

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Relinquished By: [Signature]

Received By: [Signature]

Date: 9/24/24  
Time: 1:00

Delivered By: (Circle One)

Temperature: 9.32 C / 0.72 F

Sample Condition: Cool Intact

Checked By: [Signature]

Verbal Result:  Yes  No  Add'l Phone #:  
All Results are emailed. Please provide Email address:  
bell@ensulum.com, TMorrissey@ensulum.com, THillard@ensulum.com  
REMARKS: First separation ID changes  
Incident ID: NAPP2418355674

Turnaround Time: Standard  Rush   
Thermometer ID: #148-0.11  
Correction Factor: 0.05 C

Bacteria (only) Sample Condition: Cool Intact  Yes  No  
Corrected Temp. °C: 9/24/24



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September 16, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU PHANTOM BANKS 20-25-31 FLOWLINE LEAK

Enclosed are the results of analyses for samples received by the laboratory on 09/12/24 15:39.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	09/12/2024	Sampling Date:	09/11/2024
Reported:	09/16/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 23 4' (H245547-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/13/2024	ND	2.21	110	2.00	0.422	
Toluene*	<0.050	0.050	09/13/2024	ND	2.25	113	2.00	2.42	
Ethylbenzene*	<0.050	0.050	09/13/2024	ND	2.45	122	2.00	2.72	
Total Xylenes*	<0.150	0.150	09/13/2024	ND	7.42	124	6.00	2.86	
Total BTEX	<0.300	0.300	09/13/2024	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	400	16.0	09/13/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/13/2024	ND	194	96.8	200	0.472	
DRO >C10-C28*	<10.0	10.0	09/13/2024	ND	199	99.6	200	0.413	
EXT DRO >C28-C36	<10.0	10.0	09/13/2024	ND					

Surrogate: 1-Chlorooctane 64.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	09/12/2024	Sampling Date:	09/11/2024
Reported:	09/16/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SW 08 0-4' (H245547-02)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/13/2024	ND	2.21	110	2.00	0.422	
Toluene*	<0.050	0.050	09/13/2024	ND	2.25	113	2.00	2.42	
Ethylbenzene*	<0.050	0.050	09/13/2024	ND	2.45	122	2.00	2.72	
Total Xylenes*	<0.150	0.150	09/13/2024	ND	7.42	124	6.00	2.86	
Total BTEX	<0.300	0.300	09/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	09/13/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/13/2024	ND	194	96.8	200	0.472	
DRO >C10-C28*	<10.0	10.0	09/13/2024	ND	199	99.6	200	0.413	
EXT DRO >C28-C36	<10.0	10.0	09/13/2024	ND					

Surrogate: 1-Chlorooctane 85.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	09/12/2024	Sampling Date:	09/11/2024
Reported:	09/16/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SW 09 0-4' (H245547-03)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/13/2024	ND	2.21	110	2.00	0.422		
Toluene*	<0.050	0.050	09/13/2024	ND	2.25	113	2.00	2.42		
Ethylbenzene*	<0.050	0.050	09/13/2024	ND	2.45	122	2.00	2.72		
Total Xylenes*	<0.150	0.150	09/13/2024	ND	7.42	124	6.00	2.86		
Total BTEX	<0.300	0.300	09/13/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	208	16.0	09/13/2024	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	09/13/2024	ND	194	96.8	200	0.472		
DRO >C10-C28*	<10.0	10.0	09/13/2024	ND	199	99.6	200	0.413		
EXT DRO >C28-C36	<10.0	10.0	09/13/2024	ND						

Surrogate: 1-Chlorooctane 79.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	09/12/2024	Sampling Date:	09/11/2024
Reported:	09/16/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SW 07 0-4' (H245547-04)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/13/2024	ND	2.21	110	2.00	0.422	
Toluene*	<0.050	0.050	09/13/2024	ND	2.25	113	2.00	2.42	
Ethylbenzene*	<0.050	0.050	09/13/2024	ND	2.45	122	2.00	2.72	
Total Xylenes*	<0.150	0.150	09/13/2024	ND	7.42	124	6.00	2.86	
Total BTEX	<0.300	0.300	09/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	09/13/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/13/2024	ND	194	96.8	200	0.472	
DRO >C10-C28*	<10.0	10.0	09/13/2024	ND	199	99.6	200	0.413	
EXT DRO >C28-C36	<10.0	10.0	09/13/2024	ND					

Surrogate: 1-Chlorooctane 78.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	09/12/2024	Sampling Date:	09/11/2024
Reported:	09/16/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SW 10 0-4' (H245547-05)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/13/2024	ND	2.21	110	2.00	0.422	
Toluene*	<0.050	0.050	09/13/2024	ND	2.25	113	2.00	2.42	
Ethylbenzene*	<0.050	0.050	09/13/2024	ND	2.45	122	2.00	2.72	
Total Xylenes*	<0.150	0.150	09/13/2024	ND	7.42	124	6.00	2.86	
Total BTEX	<0.300	0.300	09/13/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	09/13/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/13/2024	ND	194	96.8	200	0.472	
DRO >C10-C28*	<10.0	10.0	09/13/2024	ND	199	99.6	200	0.413	
EXT DRO >C28-C36	<10.0	10.0	09/13/2024	ND					

Surrogate: 1-Chlorooctane 74.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	09/12/2024	Sampling Date:	09/11/2024
Reported:	09/16/2024	Sampling Type:	Soil
Project Name:	PLU PHANTOM BANKS 20-25-31 FLOWL	Sampling Condition:	Cool & Intact
Project Number:	03C1558434	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: FS 29 6' (H245547-06)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/13/2024	ND	2.21	110	2.00	0.422		
Toluene*	<0.050	0.050	09/13/2024	ND	2.25	113	2.00	2.42		
Ethylbenzene*	<0.050	0.050	09/13/2024	ND	2.45	122	2.00	2.72		
Total Xylenes*	<0.150	0.150	09/13/2024	ND	7.42	124	6.00	2.86		
Total BTEX	<0.300	0.300	09/13/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	09/13/2024	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	09/13/2024	ND	194	96.8	200	0.472		
DRO >C10-C28*	<10.0	10.0	09/13/2024	ND	199	99.6	200	0.413		
EXT DRO >C28-C36	<10.0	10.0	09/13/2024	ND						

Surrogate: 1-Chlorooctane 85.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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Notes and Definitions

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

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



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

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

1 of 1

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Ensolum, LLC  
 Project Manager: David Mcinnis  
 Address: 3122 National Parks Hwy  
 City: Carlsbad State: NM Zip: 88220  
 Phone #: 337 257-8307 Fax #:   
 Project #: 03C1558434 Project Owner: XTO  
 Project Name: PLU Phantom Banks 20-25-31 Flowline Leak  
 Project Location:   
 P.O. #:   
 Company: XTO Energy Inc.  
 Attn: Army Ruth  
 Address: 3104 E. Green St.  
 City: Carlsbad State: NM Zip: 88220  
 Phone #:   
 Fax #:   
 Sampler Name: Connor Whitman

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	CHLORIDE
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H245547	F523	4'	C	1							9-11-24	925			
	SW08	0-4'		1								1100			
	SW09	0-4'		1								1105			
	SW07	0-4'		1								1115			
	SW10	0-4'		1								1120			
	F529	6'		1								1350			

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Relinquished By: *AW*  
 Date: 9-12-24  
 Time: 1:33p  
 Received By: *AP*  
 Date:   
 Time:   
 Verbal Result:  Yes  No  Add'l Phone #:   
 All Results are emailed. Please provide Email address:   
 REMARKS: Cost Center: 1081581001 Incident ID: NAPP2418355674  
 Please send copy of signed COC to: cwhitman@ensolum.com

Delivered By: (Circle One) Observed Temp. °C: 4.5°C  
 Corrected Temp. °C: 3.0°C  
 Sampler - UPS - Bus - Other:   
 Sample Condition: Cool Intact  Yes  No  
 Checked By: *AP*  
 Turnaround Time: Standard  Rush   
 Thermometer ID #13 *410*  
 Corrosion Factor: *0.2*  
 Bacteria (only) Sample Condition: Cool Intact  Yes  No  
 Corrected Temp. °C:   
 † Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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

September 25, 2024

DAVID MCINNIS  
ENSOLUM  
3122 NATIONAL PARKS HWY  
CARLSBAD, NM 88220

RE: PLU PHANTOM BANKS 20-25-31 FLOWLINE LEAK

Enclosed are the results of analyses for samples received by the laboratory on 09/19/24 13:15.

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

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

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

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

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

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

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

Sincerely,

Celey D. Keene  
Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW 11 0-4	H245699-01	Soil	17-Sep-24 10:20	19-Sep-24 13:15
SW 12 0-4	H245699-02	Soil	17-Sep-24 10:25	19-Sep-24 13:15
SW 13 0-2	H245699-03	Soil	17-Sep-24 10:30	19-Sep-24 13:15
FS 30 2	H245699-04	Soil	17-Sep-24 10:45	19-Sep-24 13:15
FS 28 2	H245699-05	Soil	17-Sep-24 10:50	19-Sep-24 13:15
FS 25 4	H245699-06	Soil	17-Sep-24 10:55	19-Sep-24 13:15
FS 26 5	H245699-07	Soil	17-Sep-24 11:00	19-Sep-24 13:15
FS 27 4	H245699-08	Soil	17-Sep-24 11:05	19-Sep-24 13:15
FS 17 4	H245699-09	Soil	17-Sep-24 11:10	19-Sep-24 13:15
FS 18 4	H245699-10	Soil	17-Sep-24 11:15	19-Sep-24 13:15
FS 19 4	H245699-11	Soil	17-Sep-24 11:20	19-Sep-24 13:15
FS 24 4	H245699-12	Soil	17-Sep-24 11:25	19-Sep-24 13:15
SW 14 0-4	H245699-13	Soil	17-Sep-24 12:20	19-Sep-24 13:15

09/25/24 - Client changed the sample ID on -11 (see COC). This is the revised report and will replace the one sent on 09/23/24.

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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**SW 11 0-4  
H245699-01 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>256</b>		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			100 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			97.6 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			101 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**SW 12 0-4  
H245699-02 (Soil)**

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

**Inorganic Compounds**

Chloride	256		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			101 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			99.8 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			104 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**SW 13 0-2  
H245699-03 (Soil)**

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

**Inorganic Compounds**

Chloride	272		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			101 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			93.6 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			97.7 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 30 2  
H245699-04 (Soil)**

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

**Inorganic Compounds**

Chloride	432		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			101 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			89.4 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			93.9 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 28 2  
H245699-05 (Soil)**

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

**Inorganic Compounds**

Chloride	48.0		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			102 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			103 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			108 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 25 4  
H245699-06 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>192</b>		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			102 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

<i>Surrogate: 1-Chlorooctane</i>			104 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			108 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 26 5  
H245699-07 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>320</b>		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			102 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

<i>Surrogate: 1-Chlorooctane</i>			102 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			107 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 27 4  
H245699-08 (Soil)**

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

**Inorganic Compounds**

Chloride	48.0		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			103 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			99.4 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			107 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 17 4  
H245699-09 (Soil)**

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

**Inorganic Compounds**

Chloride	272		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			102 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			97.0 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			102 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 18 4  
H245699-10 (Soil)**

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

**Inorganic Compounds**

Chloride	160		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			101 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			93.7 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			98.7 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 19 4  
H245699-11 (Soil)**

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

**Inorganic Compounds**

Chloride	192		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			102 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

Surrogate: 1-Chlorooctane			99.6 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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Surrogate: 1-Chlorooctadecane			104 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**FS 24 4  
H245699-12 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>528</b>		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			102 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

<i>Surrogate: 1-Chlorooctane</i>			92.9 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			97.1 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**SW 14 0-4  
H245699-13 (Soil)**

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

**Inorganic Compounds**

<b>Chloride</b>	<b>304</b>		16.0	mg/kg	4	4092018	HM	20-Sep-24	4500-CI-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Toluene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	4091923	JH	20-Sep-24	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	4091923	JH	20-Sep-24	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			101 %	71.5-134		4091923	JH	20-Sep-24	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	4091927	MS	19-Sep-24	8015B	

<i>Surrogate: 1-Chlorooctane</i>			92.2 %	48.2-134		4091927	MS	19-Sep-24	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			97.8 %	49.1-148		4091927	MS	19-Sep-24	8015B	
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\*=Accredited Analyte

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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**Inorganic Compounds - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4092018 - 1:4 DI Water</b>										
<b>Blank (4092018-BLK1)</b>										
Prepared & Analyzed: 20-Sep-24										
Chloride	ND	16.0	mg/kg							
<b>LCS (4092018-BS1)</b>										
Prepared & Analyzed: 20-Sep-24										
Chloride	400	16.0	mg/kg	400		100	80-120			
<b>LCS Dup (4092018-BSD1)</b>										
Prepared & Analyzed: 20-Sep-24										
Chloride	416	16.0	mg/kg	400		104	80-120	3.92	20	

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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**Volatile Organic Compounds by EPA Method 8021 - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4091923 - Volatiles**

**Blank (4091923-BLK1)**

Prepared: 19-Sep-24 Analyzed: 20-Sep-24

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0502		mg/kg	0.0500		100	71.5-134			

**LCS (4091923-BS1)**

Prepared: 19-Sep-24 Analyzed: 20-Sep-24

Benzene	2.12	0.050	mg/kg	2.00		106	82.8-130			
Toluene	2.07	0.050	mg/kg	2.00		104	86-128			
Ethylbenzene	2.16	0.050	mg/kg	2.00		108	85.9-128			
m,p-Xylene	4.36	0.100	mg/kg	4.00		109	89-129			
o-Xylene	2.14	0.050	mg/kg	2.00		107	86.1-125			
Total Xylenes	6.51	0.150	mg/kg	6.00		108	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0524		mg/kg	0.0500		105	71.5-134			

**LCS Dup (4091923-BSD1)**

Prepared: 19-Sep-24 Analyzed: 20-Sep-24

Benzene	2.15	0.050	mg/kg	2.00		108	82.8-130	1.74	15.8	
Toluene	2.10	0.050	mg/kg	2.00		105	86-128	1.35	15.9	
Ethylbenzene	2.17	0.050	mg/kg	2.00		108	85.9-128	0.165	16	
m,p-Xylene	4.36	0.100	mg/kg	4.00		109	89-129	0.0457	16.2	
o-Xylene	2.14	0.050	mg/kg	2.00		107	86.1-125	0.283	16.7	
Total Xylenes	6.50	0.150	mg/kg	6.00		108	88.2-128	0.124	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0508		mg/kg	0.0500		102	71.5-134			

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**Analytical Results For:**

ENSOLUM 3122 NATIONAL PARKS HWY CARLSBAD NM, 88220	Project: PLU PHANTOM BANKS 20-25-31 F Project Number: 03C1558434 Project Manager: DAVID MCINNIS Fax To:	Reported: 25-Sep-24 08:54
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**Petroleum Hydrocarbons by GC FID - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4091927 - General Prep - Organics**

<b>Blank (4091927-BLK1)</b>				Prepared & Analyzed: 19-Sep-24						
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	49.4		mg/kg	50.0		98.8	48.2-134			
Surrogate: 1-Chlorooctadecane	51.4		mg/kg	50.0		103	49.1-148			

<b>LCS (4091927-BS1)</b>				Prepared & Analyzed: 19-Sep-24						
GRO C6-C10	194	10.0	mg/kg	200		96.8	66.4-123			
DRO >C10-C28	198	10.0	mg/kg	200		99.0	66.5-118			
Total TPH C6-C28	392	10.0	mg/kg	400		97.9	77.6-123			
Surrogate: 1-Chlorooctane	54.9		mg/kg	50.0		110	48.2-134			
Surrogate: 1-Chlorooctadecane	56.7		mg/kg	50.0		113	49.1-148			

<b>LCS Dup (4091927-BSD1)</b>				Prepared & Analyzed: 19-Sep-24						
GRO C6-C10	196	10.0	mg/kg	200		98.1	66.4-123	1.30	17.7	
DRO >C10-C28	200	10.0	mg/kg	200		100	66.5-118	1.16	21	
Total TPH C6-C28	397	10.0	mg/kg	400		99.1	77.6-123	1.23	18.5	
Surrogate: 1-Chlorooctane	55.0		mg/kg	50.0		110	48.2-134			
Surrogate: 1-Chlorooctadecane	56.8		mg/kg	50.0		114	49.1-148			

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Notes and Definitions

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

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1 of 2

**Company Name:** Ensolum, LLC  
**Project Manager:** David McInnis  
**Address:** 3122 National Parks Hwy  
**City:** Carlsbad  
**State:** NM **Zip:** 88220  
**Phone #:** 337 257-8307  
**Fax #:**  
**Project #:** 03C1558434  
**Project Owner:** XTO  
**Project Name:** PLU Phantom Banks 20-25-31 Flowline Leak  
**Project Location:**  
**Sampler Name:** Connor Whitman

**FOR LAB USE ONLY**

**Lab I.D.:** H245069

**Sample I.D.:**

**Sample Depth (feet):**

**Matrix:** GROUNDWATER, WASTEWATER, SOIL, OIL, SLUDGE, OTHER:

**Preserv:** ACID/BASE, ICE / COOL, OTHER:

**DATE:** 9-17-24

**TIME:** 10:20

**BTEX:**

**TPH:**

**CHLORIDE:**

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING	BTEX	TPH	CHLORIDE
1	SW1	0-4	C	1	GROUNDWATER	ACID/BASE	10:20			
2	SW12	0-4	C	1	GROUNDWATER	ACID/BASE	10:25			
3	SW13	0-2	C	1	GROUNDWATER	ACID/BASE	10:30			
4	F530	2	C	1	GROUNDWATER	ACID/BASE	10:45			
5	F528	2	C	1	GROUNDWATER	ACID/BASE	10:50			
6	F525	2	C	1	GROUNDWATER	ACID/BASE	10:55			
7	F526	5	C	1	GROUNDWATER	ACID/BASE	11:00			
8	F227	4	C	1	GROUNDWATER	ACID/BASE	11:05			
9	F517	4	C	1	GROUNDWATER	ACID/BASE	11:10			
10	F518	4	C	1	GROUNDWATER	ACID/BASE	11:15			

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**Relinquished By:** [Signature]

**Date:** 9-19-24

**Received By:** [Signature]

**Date:** 9-19-24

**Time:** 1:15

**Observed Temp. °C:** 1.7

**Corrected Temp. °C:** 1.1

**Sample Condition:** Cool Intact  Yes  No

**Checked By:** [Signature]

**Turnaround Time:** Standard  Bacteria (only)  Cool Intact  Yes  No

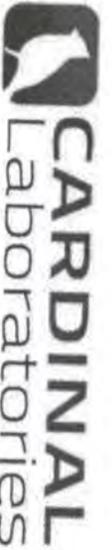
**Thermometer ID:** #140

**Correction Factor:** -0.3°C

**Remarks:** Cost Center: 1081581001 Incident ID: NAPP2413355674

**Delivered By:** (Circle One)  UPS  Bus  Other

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



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

2 of 2

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Ensolum, LLC  
 Project Manager: David Mainnis  
 Address: 3122 National Parks Hwy  
 City: Carlsbad State: NM Zip: 88220  
 Phone #: 337 257-8307 Fax #: 337 257-8307  
 Project #: 03C1558434 Project Owner: XTO  
 Project Name: PLU Phantom Banks 20-25-31 Flowline Leak  
 Project Location:  
 Sampler Name: Connor Whitman  
 P.O. #: Company: XTO Energy Inc.  
 Attn: Amy Ruth  
 Address: 3104 E. Green St.  
 City: Carlsbad State: NM Zip: 88220  
 Phone #: Fax #:

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP. # CONTAINERS	MATRIX						PRESERV.		SAMPLING		BTEX	TPH	CHLORIDE
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE			
H245699	ES1A9 *	4	C									9-19-24	1120	/	/	/
	ES24	4	C									1125	/	/	/	
	SW14	0-4	C									1220	/	/	/	

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Relinquished By: *CHN*  
 Date: 9-19-24  
 Received By: *Connor Whitman*  
 Date: 9-19-24  
 Received By: *Connor Whitman*

Turnaround Time: Standard  Rush   
 Bacteria (only)  Cool Intact  Sample Condition   
 Cool Intact  Observed Temp. °C   
 Corrected Temp. °C

Delivered By: (Circle One)  UPS  Bus  Other:   
 Observed Temp. °C: 117  
 Corrected Temp. °C: 111  
 Sample Condition: Cool Intact  Yes  No   
 Checked By: (Initials) *AW*  
 Verbal Result:  Yes  No  Add'l Phone #:  
 All Results are emailed. Please provide Email address:  
 REMARKS: *First Reproduction ID change no 9/24/24*  
 Please send copy of signed COC to: cwhitman@ensolum.com  
 Incident ID: NAPP2418355674

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

Action 410121

**QUESTIONS**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 410121
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nAPP2418355674
Incident Name	NAPP2418355674 PLU PHANTOM BANKS 20-25-31 @ 0
Incident Type	Release Other
Incident Status	Remediation Closure Report Received

<b>Location of Release Source</b>	
<i>Please answer all the questions in this group.</i>	
Site Name	PLU Phantom Banks 20-25-31
Date Release Discovered	06/10/2024
Surface Owner	Federal

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

<b>Nature and Volume of Release</b>	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Cause: Corrosion   Flow Line - Production   Crude Oil   Released: 4 BBL   Recovered: 1 BBL   Lost: 3 BBL.
Produced Water Released (bbls) Details	Cause: Corrosion   Flow Line - Production   Produced Water   Released: 12 BBL   Recovered: 4 BBL   Lost: 8 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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**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

QUESTIONS, Page 2

Action 410121

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 410121
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	<b>No</b>
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>

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

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

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

I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 12/09/2024
--	--

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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, Page 3

Action 410121

**QUESTIONS (continued)**

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 410121
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

**Site Characterization**

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

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 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 ½ and 1 (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	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

**Remediation Plan**

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

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

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

Chloride (EPA 300.0 or SM4500 Cl B)	12000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	37320
GRO+DRO (EPA SW-846 Method 8015M)	31760
BTEX (EPA SW-846 Method 8021B or 8260B)	177
Benzene (EPA SW-846 Method 8021B or 8260B)	4.7

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	06/14/2024
On what date will (or did) the final sampling or liner inspection occur	09/17/2024
On what date will (or was) the remediation complete(d)	09/17/2024
What is the estimated surface area (in square feet) that will be reclaimed	5572
What is the estimated volume (in cubic yards) that will be reclaimed	930
What is the estimated surface area (in square feet) that will be remediated	5572
What is the estimated volume (in cubic yards) that will be remediated	930

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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**Santa Fe, NM 87505**

QUESTIONS, Page 4

Action 410121

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 410121
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

**Remediation Plan (continued)**

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

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

(Select all answers below that apply.)

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

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

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

I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 12/09/2024
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The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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Action 410121

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 410121
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Deferral Requests Only</b>	
<i>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.</i>	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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Action 410121

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 410121
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Sampling Event Information</b>	
Last sampling notification (C-141N) recorded	<b>391342</b>
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	<b>10/18/2024</b>
What was the (estimated) number of samples that were to be gathered	<b>4</b>
What was the sampling surface area in square feet	<b>1000</b>

<b>Remediation Closure Request</b>	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
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	5572
What was the total volume (cubic yards) remediated	930
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	5572
What was the total volume (in cubic yards) reclaimed	930
Summarize any additional remediation activities not included by answers (above)	Site assessment and excavation activities were conducted at the Site to address the June 10, 2024, release of crude oil and produced water. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated that all COC concentrations were compliant with the Site Closure Criteria. Based on the soil sample analytical results, no further remediation was required. XTO has backfilled the excavation with material purchased locally and recontoured the Site to match pre-existing site conditions
<i>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>	
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: 12/09/2024

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Action 410121

**QUESTIONS (continued)**

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

**QUESTIONS**

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

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CONDITIONS

Action 410121

**CONDITIONS**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 410121
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**CONDITIONS**

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2418355674 PLU PHANTOM BANKS 20-25-31, thank you. This Remediation Closure Report is approved.	1/3/2025