

APPROVED



ENSOLUM

CLOSURE REPORT

Property:

Paw Swap 12 36 Fed Com #0011H

**Lea County, New Mexico
32.3984851 N, 103.6316115 W
NMOCD Incident ID: nAPP2304537144**

April 18, 2023

Ensolum Project No. 03B1417075

Prepared for:

**Oxy USA Inc.
P.O. Box 4294
Houston, TX 77210
Attn: Mr. Wade Dittrich**

Prepared by:


Beaux Jennings
Senior Project Manager


Heather Holthaus
Senior Project Manager

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ENSOLUM

CLOSURE REPORT

Paw Swap 12 36 Fed Com #0011H

**Lea County, New Mexico
32.3984851 N, 103.63161115 W
NMOCD Incident ID: nAPP2304537144**

Ensolum Project No. 03B1417075

1.0 INTRODUCTION

1.1 Executive Summary

- On February 2, 2023, a release of produced water was reported from a water transfer line failure at the Paw Swap 12 36 Fed Com #0011H, hereinafter referred to as the "Site". Approximately 27 barrels (bbls) of produced water were released to the ground surface affecting an area approximately 60 feet by 60 feet. Oxy USA Inc. (Oxy) contracted Ensolum LLC (Ensolum) to perform sampling of the release area subsequent to completion of remediation activities. On February 15, 2022, SDR Enterprises, LLC (SDR) began excavating the release area with a backhoe. The excavated soils were immediately loaded onto trucks and taken off-Site for proper disposal.
- On February 24, 2023, Ensolum arrived on-Site and collected 14 composite soil samples from the excavation floor (FS-1 through FS-14) at a depth of four feet below ground surface (bgs), and six composite soil samples from the excavation sidewalls (SW-1 through SW-6) at a depth of 0-4 feet bgs. Additionally, four delineation composite soil samples (BG-N, BG-S, BG-E, and BG-W) were collected from a depth of 0-1 feet bgs to determine the horizontal and vertical extent of the release. Based on laboratory analytical data, further excavation was required.
- On March 2 and 14, 2023, subsequent to additional excavation based on laboratory analytical data, Ensolum arrived on-Site and collected two additional composite soil samples from the excavation floor (FS-15 and FS-16) at depths of four and six feet bgs, two additional composite soil samples from the excavation sidewalls (SW-5 and SW-7) at a depth of 0-4 feet bgs, and two additional delineation composite soil samples to the north (both BG-N) at a depth of 0-1 feet bgs.
- The primary objective of the closure activities was to reduce chemical of concern (COC) concentrations in the on-Site soils to below the applicable New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) Closure Criteria for Soils Impacted by a Release using the New Mexico EMNRD OCD's NMAC 19.15.29 *Releases* as guidance.
- The final excavation area measured approximately 90 feet long and 35 feet wide, with an extension to the north that is approximately 35 feet long and 15 feet wide. The excavation depth was approximately four to six feet bgs.
- A total of 16 composite soil samples from 16 locations from the excavation floor (FS-1 through FS-16), and eight composite soil samples from seven locations from the excavation sidewalls (SW-1 through SW-7) were collected. In addition, composite soil samples from four locations (BG-N, BG-S, BG-E, and BG-W) were collected outside of the release area.

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- Based on the laboratory analytical results, the final composite soil samples collected from the excavation floor and sidewalls did not exhibit benzene, total benzene, toluene, ethylbenzene, and xylene (BTEX), total petroleum hydrocarbons (TPH), gasoline range organics (GRO), diesel range organics (DRO) and/or motor oil range organics (MRO) or chloride concentrations above the applicable NMOCD Closure Criteria. Subsequent to the results of the confirmation soil sampling, the identified impacted soils were removed and taken off-Site for proper disposal and the excavated area was backfilled with clean fill material, and then contoured to the original surrounding grade.

Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

1.2 Site Description & Background

Operator:	Oxy USA Inc. (Oxy)
Site Name:	Paw Swap 12 36 Fed Com #0011H
Location:	32.3984851 N, 103.63161115 W Lea County, New Mexico
Property:	Bureau of Land Management (BLM)
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On February 2, 2023, a release of produced water was reported from a water transfer line failure at the Site. Approximately 27 bbls of produced water were released to the ground surface affecting an area approximately 60 feet by 60 feet.

The Topographic Map depicting the location of the Site is included as **Figure 1**, the Site Vicinity Map is included as **Figure 2**, the Site Map indicating the locations of composite soil samples is included as **Figure 3**, and the Closure Criteria Map is included as **Figure 4** in **Appendix A**.

1.3 Project Objective

The primary objective of the closure activities was to reduce COC concentrations in the on-Site soils to below the applicable New Mexico EMNRD OCD closure criteria concentrations.

2.0 CLOSURE CRITERIA

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. In order to address activities related to exempt oil and gas releases, the New Mexico EMNRD OCD references NMAC 19.15.29 *Releases*, which establishes investigation and abatement action requirements for sites subject to reporting and/or corrective action. Ensolum utilized information provided by Oxy, the general site characteristics, and information available from the New Mexico Office of the State Engineer (OSE) and the New Mexico EMNRD OCD Imaging database to determine the appropriate closure criteria for the Site.

- The Site is not located within 300 feet of a New Mexico EMNRD OCD-defined continuously flowing watercourse or any other significant watercourse.
- The Site is not located within 200 feet of a lakebed, sinkhole, or playa lake.
- The Site is not located within 300 feet from an occupied permanent residence, school, hospital, institution, or church.

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- According to the OSE WRSS database there are no private, domestic freshwater wells used by less than five (5) households for domestic or stock water purposes identified within 500 feet of the Site.
- According to the OSE WRSS database there are no freshwater wells identified within 1,000 feet of the Site as declared in the previous bullet.
- The Site is not located within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3.
- The Site is not located within 300 feet of a wetland.
- Based on information identified on the New Mexico Mining and Minerals Division’s GIS, Maps and Mine Data database, the Site is not located within an area overlying a subsurface mine.
- Based on the Karst Occurrence Potential (.kmz) provided by the BLM, the Site is not located within an unstable area.
- The Site is noted to be located within an area of minimal flood hazard.

Based on the identified siting criteria, cleanup goals for soils remaining in place at the Site include:

Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	EPA Method	Limit
≤50 feet	Chloride	300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	SW-846 Method 8015M	100 mg/kg
	BTEX	SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	SW-846 Method 8021B or 8260B	10 mg/kg

3.0 SOIL REMEDIATION ACTIVITIES

On February 2, 2023, a release of produced water was reported from a water transfer line failure at the Site. Approximately 27 bbls of produced water were released to the ground surface affecting an area approximately 60 feet by 60 feet. Oxy contracted Ensolum to perform sampling of the release area subsequent to completion of remediation activities. On February 15, 2022, SDR began excavating the release area with a backhoe. The excavated soils were immediately loaded onto trucks and taken off-Site for proper disposal.

On February 24, 2023, Ensolum arrived on-Site and collected 14 composite soil samples from the excavation floor (FS-1 through FS-14) at a depth of four feet bgs, and six composite soil samples from the excavation sidewalls (SW-1 through SW-6) at a depth of 0-4 feet bgs. Additionally, four delineation composite soil samples (BG-N, BG-S, BG-E, and BG-W) were collected from a depth of 0-1 feet bgs to determine the horizontal and vertical extent of the release. Based on laboratory analytical data, further excavation was required.

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On March 2 and 14, 2023, subsequent to additional excavation based on laboratory analytical data, Ensolum arrived on-Site and collected two additional composite soil samples from the excavation floor (FS-15 and FS-16) at depths of four and six feet bgs, two additional composite soil samples from the excavation sidewalls (SW-5 and SW-7) at a depth of 0-4 feet bgs, and two additional delineation composite soil samples to the north (BG-N) at a depth of 0-1 feet bgs.

The composite soil samples were analyzed for BTEX, TPH and chloride in accordance with NMOCD Closure Criteria for Soils Impacted by a Release (NMOCD Closure Criteria).

The final excavation area measured approximately 90 feet long and 35 feet wide, with an extension to the north that is approximately 35 feet long and 15 feet wide. The excavation depth was approximately four to six feet bgs. The excavated impacted soils were removed and taken off-Site for proper disposal.

The lithology encountered during the completion of sampling activities consisted primarily of a poorly graded very fine brown sand and caliche.

Figure 3 identifies approximate composite soil sample locations and approximate dimensions of the impacted area with respect to the Site (**Appendix A**). Photographic documentation of the field activities is included in **Appendix C**.

4.0 SOIL SAMPLING PROGRAM

Ensolum's composite soil sampling program included the collection of 16 composite soil samples from 16 locations from the excavation floor (FS-1 through FS-16), and eight composite soil samples from seven locations from the excavation sidewalls (SW-1 through SW-7). In addition, composite soil samples were collected from four locations (BG-N, BG-S, BG-E, and BG-W) outside of the release area.

The composite soil samples were collected and placed in laboratory prepared glassware, labeled/sealed using laboratory supplied labels and custody seals, and stored on ice in a cooler. The samples were relinquished to Cardinal Laboratories in Hobbs, New Mexico and/or Eurofins Environmental Testing in Midland, Texas for an expedited laboratory analysis.

5.0 SOIL LABORATORY ANALYTICAL METHODS

The composite soil samples were analyzed for BTEX utilizing Environmental Protection Agency (EPA) SW-846 Method 8021B, TPH GRO/DRO/MRO utilizing EPA SW-846 Method 8015M, and chloride utilizing EPA Method 4500-Cl B and/or EPA Method 300.0.

Laboratory analytical results are summarized in **Table 1** in **Appendix D**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix E**.

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH GRO/DRO/MRO, and chloride concentrations associated with the composite soil samples collected from the excavation floor and sidewalls (FS-1 through FS-16, and SW-1 through SW-7) and outside the release area (BG-N, BG-S, BG-E and BG-W) to the applicable NMOCD Closure Criteria.

- Laboratory analytical results indicate benzene concentrations for the composite soil samples are below the laboratory sample detection limits (SDLs), which are below the applicable NMOCD Closure Criteria of 10 milligrams per kilogram (mg/kg).
- Laboratory analytical results indicate that total BTEX concentrations for the composite soil samples are below the laboratory SDLs, which are below the applicable NMOCD Closure Criteria of 50 mg/kg.

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- Laboratory analytical results indicate combined TPH GRO/DRO/MRO concentrations for the composite soil samples are below the laboratory SDLs and/or the applicable NMOCD Closure Criteria of 100 mg/kg for groundwater ≤50 feet.
- Laboratory analytical results indicate chloride concentrations for one composite soil sample collected from the excavation sidewall (SW-5) and two composite soil samples collected for delineation purposes (both BG-N) exhibited concentrations ranging from 1,360 mg/kg to 26,400 mg/kg, which exceed the applicable NMOCD Closure Criteria of 600 mg/kg for groundwater ≤50 feet. The soil in these locations were subsequently removed, immediately loaded onto trucks during additional excavation activities and taken off-Site for proper disposal.
- Laboratory analytical results indicate chloride concentrations for the final composite soil samples exhibited chloride concentrations ranging from 32.0 mg/kg to 480 mg/kg, which are below the applicable NMOCD Closure Criteria of 600 mg/kg for groundwater ≤50 feet.

Laboratory analytical results are summarized in **Table 1** in **Appendix D**.

7.0 RECLAMATION AND RE-VEGETATION

Subsequent to the results of the final confirmation soil sampling, the identified impacted soils were removed and taken off-Site for proper disposal. The excavated area was backfilled with clean fill material, and then contoured to the original surrounding grade. Once the area was brought back to original grade, a BLM approved seed mixture was sown into the surface area of the backfill for re-vegetation.

8.0 FINDINGS AND RECOMMENDATION

- On February 2, 2023, a release of produced water was reported from a water transfer line failure at the Site. Approximately 27 bbls of produced water were released to the ground surface affecting an area approximately 60 feet by 60 feet. Oxy contracted Ensolum to perform sampling of the release area subsequent to completion of remediation activities. On February 15, 2022, SDR began excavating the release area with a backhoe. The excavated soils were taken off-Site for proper disposal.
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- On March 2 and 14, 2023, subsequent to additional excavation based on laboratory analytical data, Ensolum arrived on-Site and collected two additional composite soil samples from the excavation floor (FS-15 and FS-16) at depths of four and six feet bgs, two additional composite soil samples from the excavation sidewalls (SW-5 and SW-7) at a depth of 0-4 feet bgs, and two additional delineation composite soil samples to the north (both BG-N) at a depth of 0-1 feet bgs.
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- The final excavation area measured approximately 90 feet long and 35 feet wide, with an extension to the north that is approximately 35 feet long and 15 feet wide. The excavation depth was approximately four to six feet bgs.

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- A total of 16 composite soil samples from 16 locations from the excavation floor (FS-1 through FS-16), and eight composite soil samples from seven locations from the excavation sidewalls (SW-1 through SW-7) were collected. In addition, composite soil samples from four locations (BG-N, BG-S, BG-E, and BG-W) were collected outside of the release area.
- Based on the laboratory analytical results, the final composite soil samples collected from the excavation floor and sidewalls did not exhibit benzene, total BTEX, TPH/GRO/DRO/MRO or chloride concentrations above the applicable NMOCD Closure Criteria. Subsequent to the results of the confirmation soil sampling, the identified impacted soils were removed and taken off-Site for proper disposal and the excavated area was backfilled with clean fill material, and then contoured to the original surrounding grade.

Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

9.1 Standard of Care

Ensolum's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Ensolum makes no warranties, express or implied, as to the services performed hereunder. Additionally, Ensolum does not warrant the work of third parties supplying information used in the report (e.g., laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client, as detailed in our proposal.

9.2 Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Ensolum cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during the investigation. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Ensolum's findings, and recommendations are based solely upon data available to Ensolum at the time of these services.

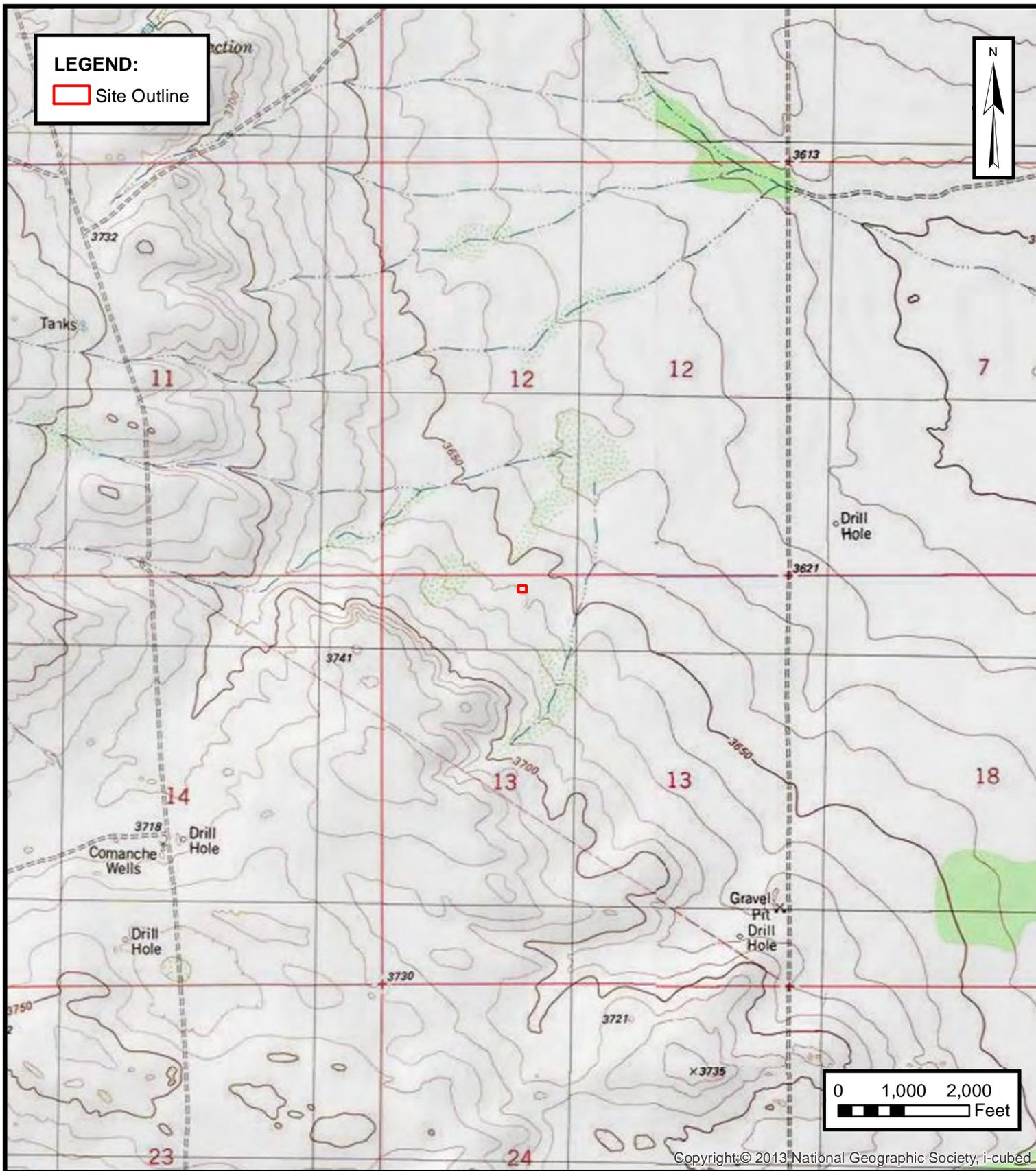
9.3 Reliance

This report has been prepared for the exclusive use of Oxy USA, Inc., and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization Oxy USA, Inc. and Ensolum. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the Closure Report, and Ensolum's Master Services Agreement. The limitation of liability defined in the agreement is the aggregate limit of Ensolum's liability to the client.



APPENDIX A

Figures



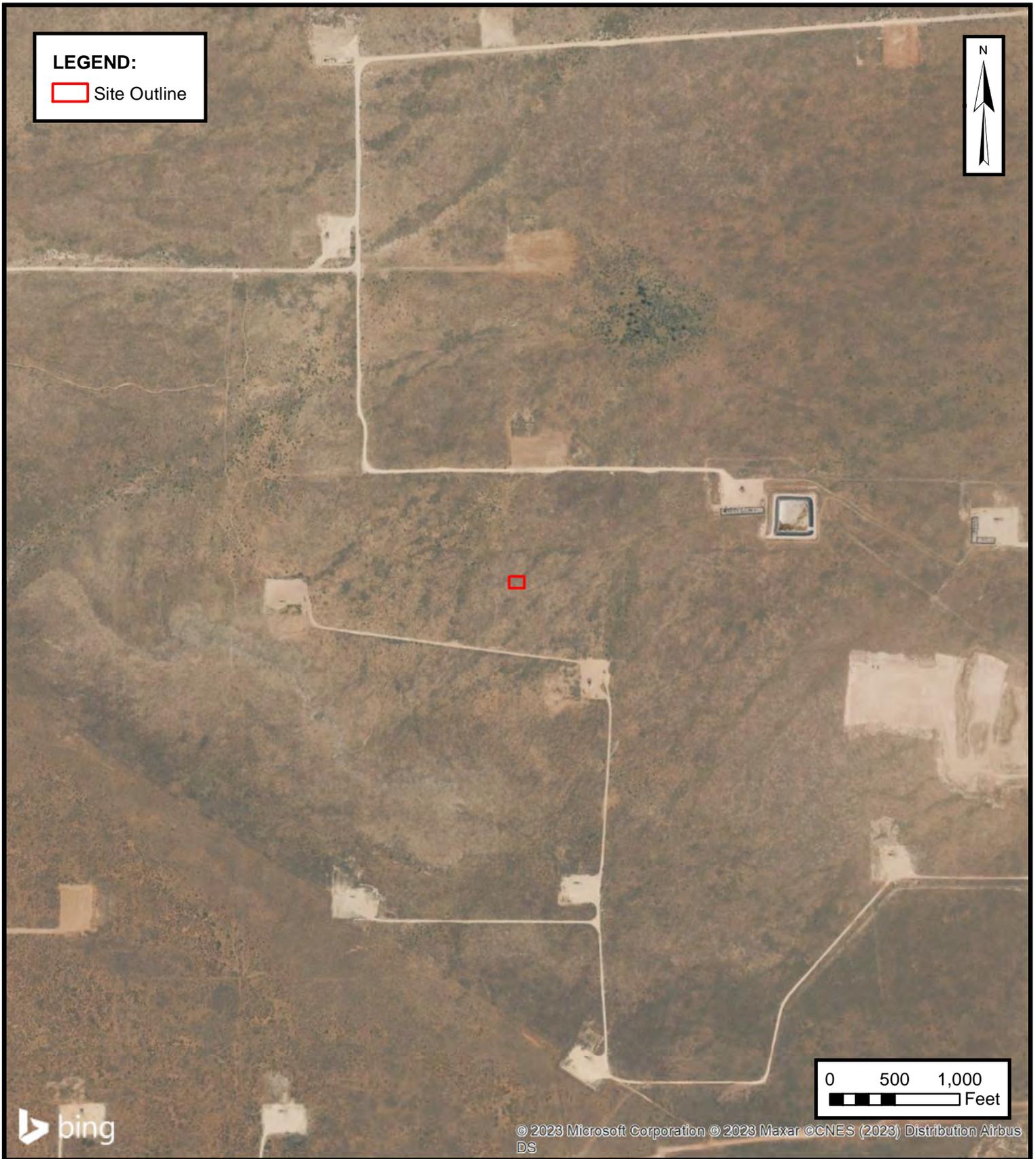
ENSOLUM
 Environmental, Engineering and
 Hydrogeologic Consultants

TOPOGRAPHIC MAP

OXY USA INC.
 PAW SWAP 12 36 FED COMM 0011H
 Eddy County, New Mexico
 32.3984851° N, 103.631161115° W

PROJECT NUMBER: 03B1417075

FIGURE
1



ENSOLUM
 Environmental, Engineering and
 Hydrogeologic Consultants

SITE VICINITY MAP

OXY USA INC.
 PAW SWAP 12 36 FED COMM 0011H
 Eddy County, New Mexico
 32.3984851° N, 103.631161115° W

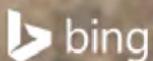
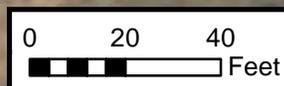
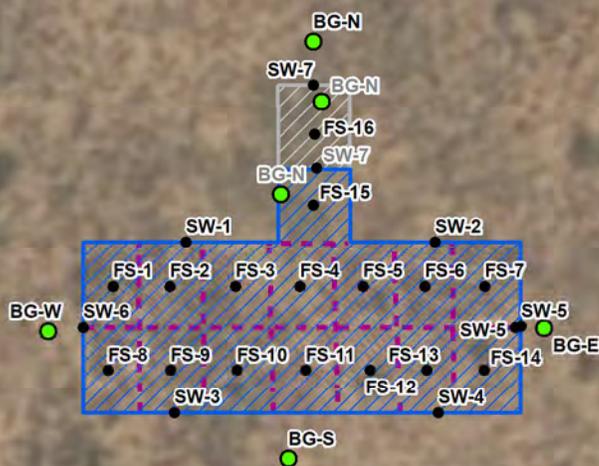
PROJECT NUMBER: 03B1417075

FIGURE

2

LEGEND:

- Composite Soil Sample Location
- Background Soil Sample Location
-  Extent of Excavation
-  Extent of Additional Excavation
- - - Composite Soil Sample Boundary



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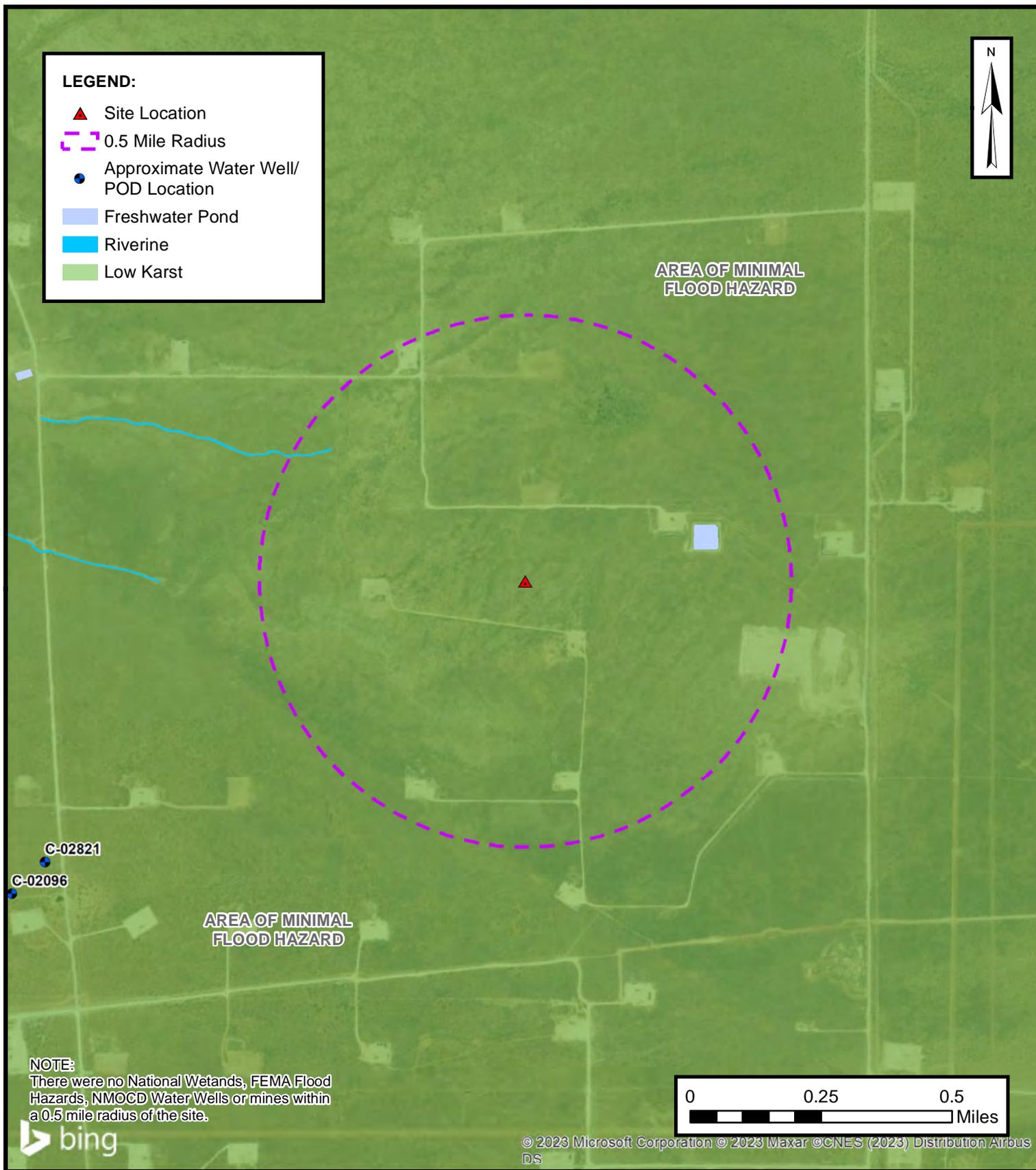
SITE MAP

OXY USA INC.
 PAW SWAP 12 36 FED COMM 0011H
 Eddy County, New Mexico
 32.3984851° N, 103.631161115° W

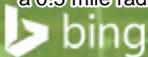
PROJECT NUMBER: 03B1417075

FIGURE

3



NOTE:
 There were no National Wetlands, FEMA Flood Hazards, NMOCD Water Wells or mines within a 0.5 mile radius of the site.



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CLOSURE CRITERIA MAP

OXY USA INC.
 PAW SWAP 12 36 FED COMM 0011H
 Eddy County, New Mexico
 32.3984851° N, 103.631161115° W

PROJECT NUMBER: 03B1417075

FIGURE

4



APPENDIX B

Supporting Documentation

Beaux Jennings

From: Beaux Jennings
Sent: Tuesday, February 28, 2023 7:53 PM
To: OCD.Enviro@emnrd.nm.gov
Subject: Paw Swap 12 36 Fed Com #0011H (Incident ID # nAPP2304537144)

Good Afternoon,

On behalf of Oxy USA Inc, Ensolum, LLC would like to provide notification for sampling activities that will be conducted at the Paw Swap 12 36 Fed Com #0011H (Incident ID # nAPP2304537144) on Thursday, March 2nd . The samples may be used for closure, provided that they meet applicable closure limits.

Thank you,



Beaux Jennings
Senior Project Manager
210-219-8858
Ensolum, LLC
in f 

Beaux Jennings

From: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Sent: Monday, February 20, 2023 10:08 AM
To: Beaux Jennings
Cc: Nobui, Jennifer, EMNRD; Bratcher, Michael, EMNRD
Subject: RE: [EXTERNAL] Paw Swap 12 36 Fed Com #0011H (Incident ID # nAPP2304537144)

[****EXTERNAL EMAIL****]

Beaux,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
<http://www.emnrd.nm.gov>



From: Beaux Jennings <bjennings@ensolum.com>
Sent: Friday, February 17, 2023 3:24 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] Paw Swap 12 36 Fed Com #0011H (Incident ID # nAPP2304537144)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good Afternoon,

On behalf of Oxy USA Inc, Ensolum, LLC would like to provide notification for sampling activities that will be conducted at the Paw Swap 12 36 Fed Com #0011H (Incident ID # nAPP2304537144) on Thursday, February 23rd. The samples may be used for closure, provided that they meet applicable closure limits.

Thank you,



Beaux Jennings
Senior Project Manager
210-219-8858
Ensolum, LLC
in f

Beaux Jennings

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Thank you,

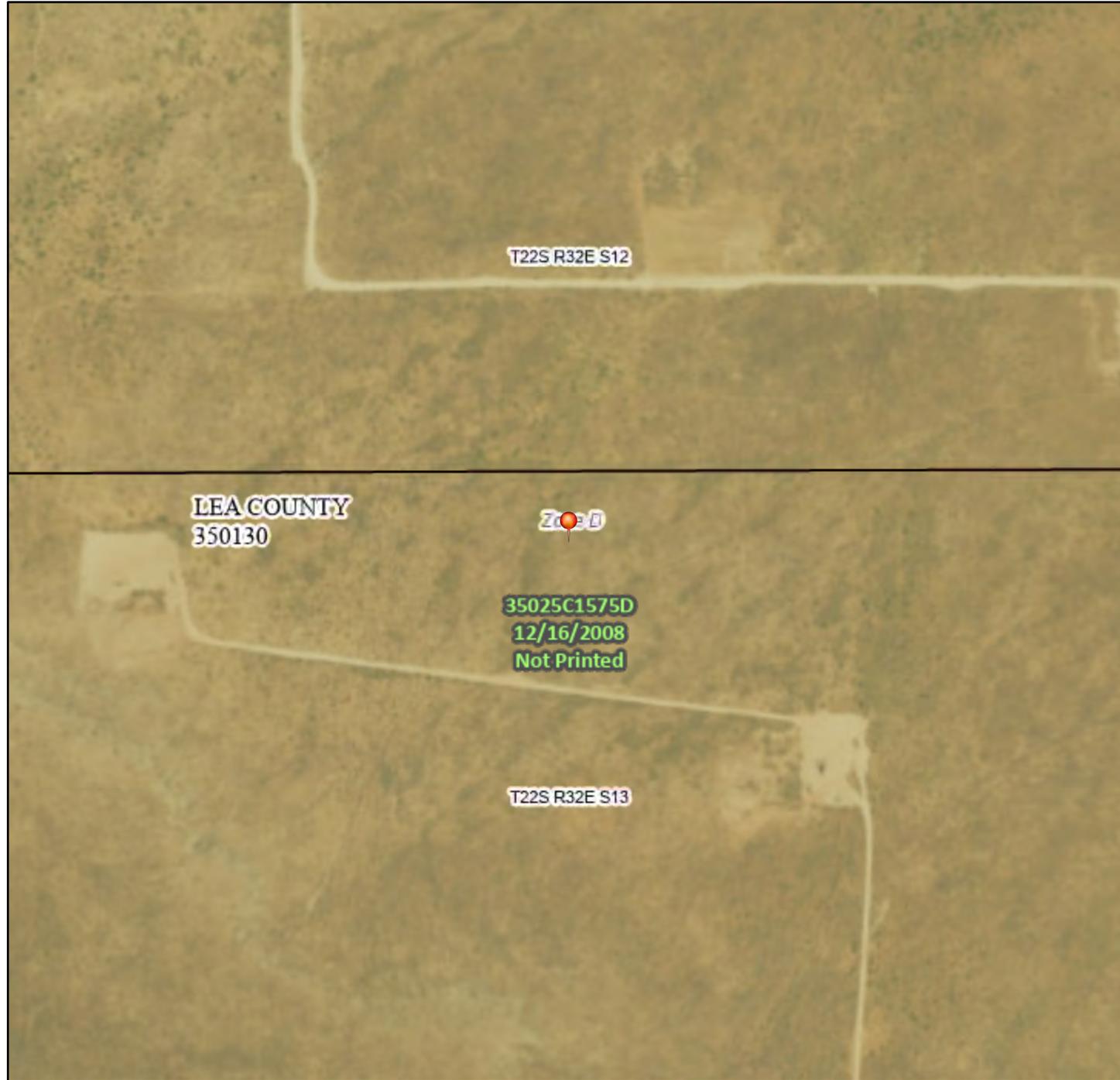


Beaux Jennings
Senior Project Manager
210-219-8858
Ensolum, LLC
in f 

National Flood Hazard Layer FIRMMette



103°38'13"W 32°24'10"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| MAP PANELS | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



103°37'36"W 32°23'39"N

Released to Imaging: 6/30/2023 2:22:19 PM

0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/13/2023 at 12:49 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Legend *Page 19 of 90*

-  32.3984851, -103.63161115
-  High
-  Low
-  Medium

Write a description for your map.

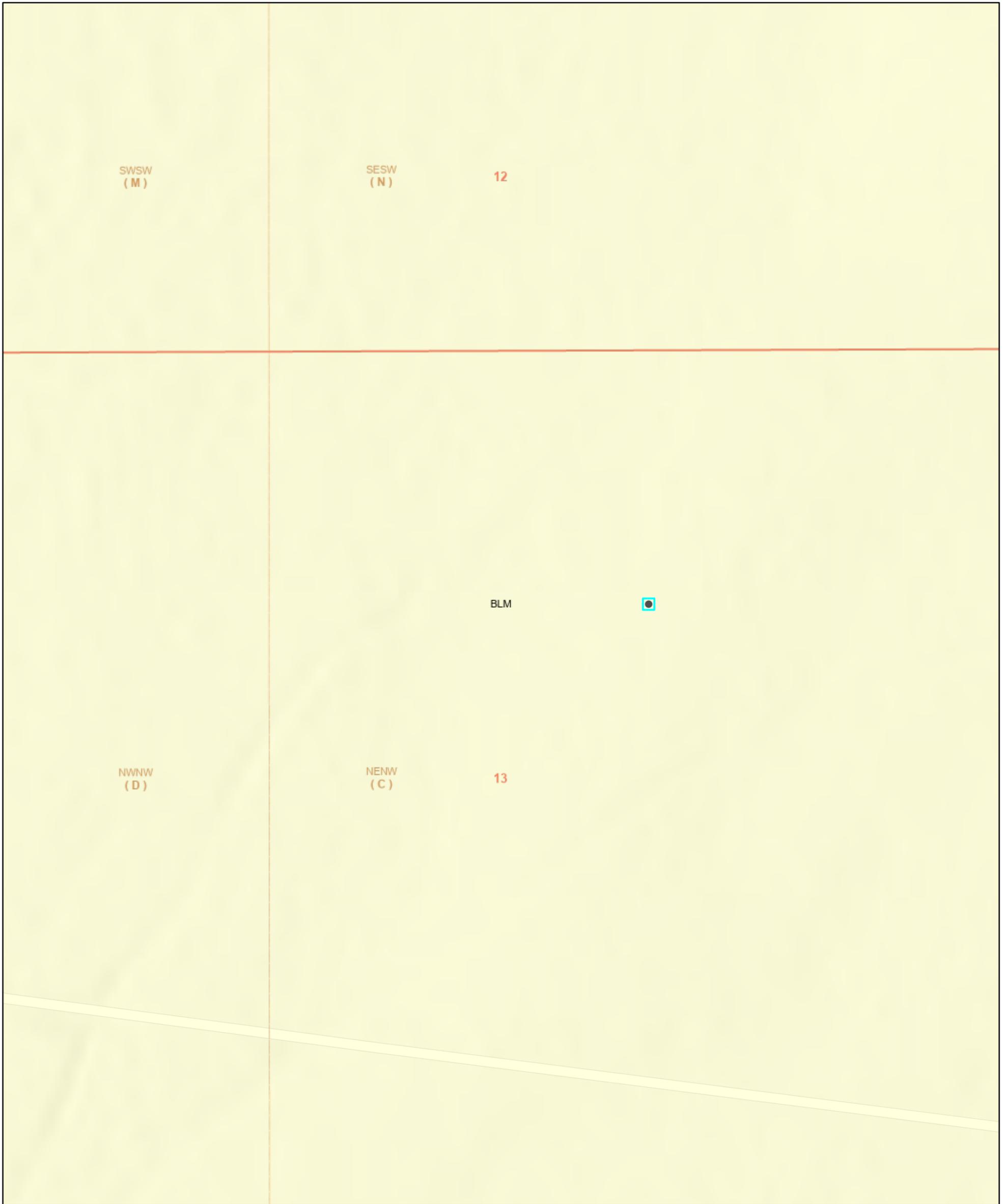
32.3984851, -103.63161115



Google Earth



Active Mines in New Mexico

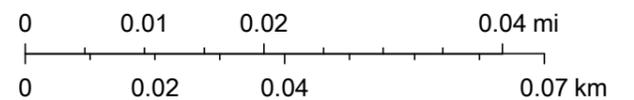


4/13/2023, 11:40:25 AM

Land Ownership

- BLM
- PLSS Second Division
- PLSS First Division

1:1,128



U.S. BLM, Esri Community Maps Contributors, New Mexico State University, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US



NWI Map



April 13, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

OSE POD Locations Map



4/13/2023, 11:27:26 AM

GIS WATERS PODs

- Active
- Pending
-
- OSE District Boundary

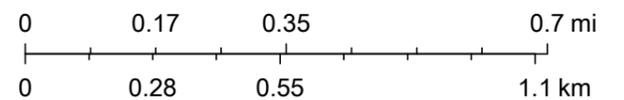
Water Right Regulations

- Closure Area
- New Mexico State Trust Lands
- Both Estates

NHD Flowlines

- Artificial Path
- Stream River
- Site Boundaries

1:18,056



Esri, HERE, iPC, U.S. Department of Energy Office of Legacy Management, Esri, HERE, Garmin, iPC, Maxar



APPENDIX C

Photographic Documentation



View of impact area prior to remediation activities, facing west.



View of impact area prior to remediation activities, facing east.

Date & Time: Thu, Mar 02, 2023 at 11:44:52 MST
Position: +032.397829° / -103.631060° (±15.6ft)
Altitude: 3687ft (±11.1ft)
Datum: WGS-84
Azimuth/Bearing: 305° N55W 5422mils True (±10°)
Elevation Angle: -14.5°
Horizon Angle: -01.1°
Zoom: 0.5X



View of excavation area, facing northwest.

Date & Time: Thu, Mar 02, 2023 at 14:20:07 MST
Position: +032.397821° / -103.631177° (±15.6ft)
Altitude: 3683ft (±10.9ft)
Datum: WGS-84
Azimuth/Bearing: 000° N00E 0000mils True (±13°)
Elevation Angle: -11.5°
Horizon Angle: -01.6°
Zoom: 1.0X



View of excavation area, facing north.



APPENDIX D

Tables

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 Paw Swap 12 36 Fed Com 0011H
 Eddy County, New Mexico
 Ensolum Project No. 03B1417075

Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total TPH (GRO+DRO+MRO) (mg/kg)	Chloride (mg/kg)	
New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (≤ 50 feet)			10	NE	NE	NE	50	NE	NE	NE	100	600	
Floor Sample Analytical Results													
FS-1	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	112	
FS-2	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	48.0	
FS-3	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	224	
FS-4	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	304	
FS-5	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	64.0	
FS-6	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	192	
FS-7	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32.0	
FS-8	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	128	
FS-9	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	48.0	
FS-10	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32.0	
FS-11	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	64.0	
FS-12	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	48.0	
FS-13	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	48.0	
FS-14	02/24/2023	4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32.0	
FS-15	03/02/2023	4	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	<15.0	22.8 J	<15.0	22.8 J	227	
FS-16	03/14/2023	6	NS					NS					480
Sidewall Sample Analytical Results													
SW-1	02/24/2023	0-4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	336	
SW-2	02/24/2023	0-4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	224	
SW-3	02/24/2023	0-4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	80.0	
SW-4	02/24/2023	0-4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	16.0	
SW-5	02/24/2023	0-4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	1,360	
	03/02/2023	0-4	<0.000388	<0.000460	<0.000570	<0.00102	<0.00102	21.6 J	22.5 J	<15.0	44.1 J	75.9	
SW-6	02/24/2023	0-4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	176	
SW-7	03/02/2023	0-4	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	20.3 J	18.7 J	<15.0	39.0 J	142	
Background Sample Analytical Results													
BG-N	02/24/2023	0-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	12.2	<10.0	12.2	11,800	
	03/02/2023	0-1	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	26.2 J	144	<15.0	170	26,400	
	03/14/2023	0-1	NS					NS					64.0
BG-S	02/24/2023	0-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32.0	
BG-E	02/24/2023	0-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	60.4	<10.0	60.4	416	
BG-W	02/24/2023	0-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	96.0	

Concentrations in **bold** and yellow exceed the New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release (≤ 50 feet)

Additional Excavation and/or Re-Sample

- bgs: below ground surface
- mg/kg: milligrams per kilogram
- NA: Not Applicable
- NE: Not Established
- NS: Not Sampled
- BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
- GRO: Gasoline Range Organics
- DRO: Diesel Range Organics
- MRO: Motor Oil/Lube Oil Range Organics
- TPH: Total Petroleum Hydrocarbon



APPENDIX E

Laboratory Data Sheets and Chain-of-Custody Documentation



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

February 28, 2023

BEAUX JENNINGS
ENSOLUM, LLC
705 W WADLEY AVE.
MIDLAND, TX 79705

RE: PAWSWAP 12-36 FED COM 0011H

Enclosed are the results of analyses for samples received by the laboratory on 02/24/23 12:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene
Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 1 4' (H230871-01)

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	02/27/2023	ND	2.15	108	2.00	6.07	
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70	
Total BTEX	<0.300	0.300	02/27/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	02/27/2023	ND	400	100	400	7.69	

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	02/27/2023	ND	182	90.9	200	1.08	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 132 % 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, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 2 4' (H230871-02)

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	02/27/2023	ND	2.15	108	2.00	6.07		
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70		
Total BTEX	<0.300	0.300	02/27/2023	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	48.0	16.0	02/27/2023	ND	400	100	400	7.69		

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	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 106 % 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



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

Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 3 4' (H230871-03)

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	02/27/2023	ND	2.15	108	2.00	6.07		
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70		
Total BTEX	<0.300	0.300	02/27/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	02/27/2023	ND	400	100	400	7.69		

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	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 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, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 4 4' (H230871-04)

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	02/27/2023	ND	2.15	108	2.00	6.07		
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70		
Total BTEX	<0.300	0.300	02/27/2023	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	304	16.0	02/27/2023	ND	400	100	400	7.69		

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	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 105 % 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, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 5 4' (H230871-05)

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	02/27/2023	ND	2.15	108	2.00	6.07	
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70	
Total BTEX	<0.300	0.300	02/27/2023	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	64.0	16.0	02/27/2023	ND	400	100	400	7.69	

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	02/27/2023	ND	182	90.9	200	1.08	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 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, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 6 4' (H230871-06)

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	02/27/2023	ND	2.15	108	2.00	6.07		
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70		
Total BTEX	<0.300	0.300	02/27/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 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	192	16.0	02/27/2023	ND	400	100	400	7.69		

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	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 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, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 7 4' (H230871-07)

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	02/27/2023	ND	2.15	108	2.00	6.07		
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70		
Total BTEX	<0.300	0.300	02/27/2023	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	32.0	16.0	02/27/2023	ND	400	100	400	7.69		

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	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 8 4' (H230871-08)

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	02/27/2023	ND	2.15	108	2.00	6.07	
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70	
Total BTEX	<0.300	0.300	02/27/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	02/27/2023	ND	400	100	400	7.69	

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	02/27/2023	ND	182	90.9	200	1.08	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 9 4' (H230871-09)

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	02/27/2023	ND	2.15	108	2.00	6.07		
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70		
Total BTEX	<0.300	0.300	02/27/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/27/2023	ND	400	100	400	7.69		

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	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 10 4' (H230871-10)

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	02/27/2023	ND	2.15	108	2.00	6.07		
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70		
Total BTEX	<0.300	0.300	02/27/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/27/2023	ND	400	100	400	7.69		

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	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 11 4' (H230871-11)

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	02/27/2023	ND	2.15	108	2.00	6.07		
Toluene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	6.13		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.01	100	2.00	6.98		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.13	102	6.00	7.70		
Total BTEX	<0.300	0.300	02/27/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 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	64.0	16.0	02/27/2023	ND	400	100	400	7.69		

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	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 12 4' (H230871-12)

BTEX 8021B		mg/kg		Analyzed By: ZZZ						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47		
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30		
Total BTEX	<0.300	0.300	02/27/2023	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	48.0	16.0	02/27/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 95.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 13 4' (H230871-13)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	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	48.0	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	182	90.9	200	1.08	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: FS - 14 4' (H230871-14)

BTEX 8021B		mg/kg		Analyzed By: ZZZ						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47		
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67		
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57		
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30		
Total BTEX	<0.300	0.300	02/27/2023	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	32.0	16.0	02/27/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	182	90.9	200	1.08		
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311		
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND						

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 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, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: SW - 1 0-4' (H230871-15)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	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	336	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	182	90.9	200	1.08	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	191	95.5	200	0.311	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 85.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.4 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: SW - 2 0-4' (H230871-16)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	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	224	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 99.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: SW - 3 0-4' (H230871-17)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	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	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 85.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: SW - 4 0-4' (H230871-18)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 93.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: SW - 5 0-4' (H230871-19)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	1360	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 72.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 77.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: SW - 6 0-4' (H230871-20)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 92.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.9 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: BG - N 0-1' (H230871-21)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	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	11800	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	12.2	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: BG - S 0-1' (H230871-22)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: BG - E 0-1' (H230871-23)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	416	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	60.4	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 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, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	02/24/2023	Sampling Date:	02/24/2023
Reported:	02/28/2023	Sampling Type:	Soil
Project Name:	PAWSWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY, COUNTY NM		

Sample ID: BG - W 0-1' (H230871-24)

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2023	ND	2.09	104	2.00	4.47	
Toluene*	<0.050	0.050	02/27/2023	ND	2.06	103	2.00	3.67	
Ethylbenzene*	<0.050	0.050	02/27/2023	ND	2.16	108	2.00	3.57	
Total Xylenes*	<0.150	0.150	02/27/2023	ND	6.62	110	6.00	4.30	
Total BTEX	<0.300	0.300	02/27/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	02/27/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2023	ND	195	97.4	200	6.60	
DRO >C10-C28*	<10.0	10.0	02/27/2023	ND	186	93.2	200	5.88	
EXT DRO >C28-C36	<10.0	10.0	02/27/2023	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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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

page 2 of 3

Company Name: <u>Ensolium, LLC</u>		BILL TO		ANALYSIS REQUEST											
Project Manager: <u>Beaux Jennings</u>		P.O. #:		<div style="display: flex; flex-direction: column; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH 8015m</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX 8021b</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Chlorides 4500</div> </div>											
Address: <u>601 Mariefeld</u>		Company:													
City: <u>Midland</u> State: <u>TX</u> Zip: <u>79701</u>		Attn:													
Phone #: <u>580-406-3647</u> Fax #:		Address:													
Project #: <u>03B1117075</u> Project Owner:		City:													
Project Name: <u>Paw Swap 12-36 Fed com 0011H</u>		State: Zip:													
Project Location: <u>Eddy County, NM</u>		Phone #:													
Sampler Name: <u>Kailie Smith</u>		Fax #:													

Lab I.D.	Sample I.D.	Depth	(GRAB OR (C)OMP. # CONTAINERS	MATRIX						PRESERV.		SAMPLING		DATE	TIME
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:			
<u>11</u>	<u>FS-11</u>	<u>4'</u>	<u>C 1</u>							<input checked="" type="checkbox"/>					
<u>12</u>	<u>IS-12 FS-12</u>	<u>4'</u>	<u>C 1</u>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1040</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<u>13</u>	<u>FS-13</u>	<u>4'</u>	<u>C 1</u>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1041</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<u>14</u>	<u>FS-14</u>	<u>4'</u>	<u>C 1</u>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1042</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<u>15</u>	<u>SW-1</u>	<u>0-4'</u>	<u>C 1</u>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1043</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<u>16</u>	<u>SW-2</u>	<u>0-4'</u>	<u>C 1</u>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1115</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<u>17</u>	<u>SW-3</u>	<u>0-4'</u>	<u>C 1</u>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1116</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<u>18</u>	<u>SW-4</u>	<u>0-4'</u>	<u>C 1</u>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1117</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<u>19</u>	<u>SW-5</u>	<u>0-4'</u>	<u>C 1</u>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1118</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<u>20</u>	<u>SW-6</u>	<u>0-4'</u>	<u>C 1</u>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1119</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
										<input checked="" type="checkbox"/>			<u>2/24/23</u>	<u>1120</u>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

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Relinquished By:	Date: <u>2-24-23</u> Time: <u>8:35</u>	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date:	Received By:	All Results are emailed. Please provide Email address:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C: <u>25.2</u> Corrected Temp. °C: <u>19.2</u>	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No	REMARKS:
TURNAROUND TIME: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Turnaround Time: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	CHECKED BY:	Bacteria (only) Sample Condition Cool Intact Observed Temp. °C <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Beaux Jennings
 Ensolum
 601 N. Marienfeld St.
 Suite 400
 Midland, Texas 79701

Generated 3/16/2023 2:22:57 PM

JOB DESCRIPTION

PAW Swap12 36
 SDG NUMBER Lea County, NM

JOB NUMBER

880-25403-1

Eurofins Midland
 1211 W. Florida Ave
 Midland TX 79701



Eurofins Midland

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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3/16/2023 2:22:57 PM

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Ensolum
Project/Site: PAW Swap12 36

Laboratory Job ID: 880-25403-1
SDG: Lea County, NM

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Definitions/Glossary

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Job ID: 880-25403-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-25403-1

Receipt

The samples were received on 3/3/2023 8:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-48498 and 880-48498 and analytical batch 880-48669 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. The associated samples are: SW-5 (880-25403-1), (890-4255-A-1-A), (890-4255-A-1-B MS) and (890-4255-A-1-C MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Client Sample ID: SW-5

Lab Sample ID: 880-25403-1

Date Collected: 03/02/23 14:15

Matrix: Solid

Date Received: 03/03/23 08:20

Sample Depth: 0-4 ft

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000388	U	0.00202	0.000388 mg/Kg		03/10/23 15:05	03/15/23 12:25	1
Toluene	<0.000460	U	0.00202	0.000460 mg/Kg		03/10/23 15:05	03/15/23 12:25	1
Ethylbenzene	<0.000570	U	0.00202	0.000570 mg/Kg		03/10/23 15:05	03/15/23 12:25	1
m-Xylene & p-Xylene	<0.00102	U	0.00403	0.00102 mg/Kg		03/10/23 15:05	03/15/23 12:25	1
o-Xylene	0.000359	J	0.00202	0.000347 mg/Kg		03/10/23 15:05	03/15/23 12:25	1
Xylenes, Total	<0.00102	U	0.00403	0.00102 mg/Kg		03/10/23 15:05	03/15/23 12:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	03/10/23 15:05	03/15/23 12:25	1
1,4-Difluorobenzene (Surr)	91		70 - 130	03/10/23 15:05	03/15/23 12:25	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00403	0.00102 mg/Kg			03/15/23 15:50	1

Method: TCEQ TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12 Range Hydrocarbons	21.6	J	49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 11:33	1
>C12-C28 Range Hydrocarbons	22.5	J	49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 11:33	1
>C28-C35 Range Hydrocarbons	<15.0	U	49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 11:33	1
Total Petroleum Hydrocarbons (C6-C35)	44.1	J	49.9	15.0 mg/Kg			03/07/23 14:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	108		70 - 130	03/06/23 08:31	03/06/23 11:33	1
o-Terphenyl (Surr)	104		70 - 130	03/06/23 08:31	03/06/23 11:33	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	75.9		4.96	0.392 mg/Kg			03/15/23 22:52	1

Client Sample ID: SW-7

Lab Sample ID: 880-25403-2

Date Collected: 03/02/23 13:20

Matrix: Solid

Date Received: 03/03/23 08:20

Sample Depth: 0-4 ft

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000383	U	0.00199	0.000383 mg/Kg		03/10/23 15:05	03/15/23 12:46	1
Toluene	<0.000454	U	0.00199	0.000454 mg/Kg		03/10/23 15:05	03/15/23 12:46	1
Ethylbenzene	<0.000563	U	0.00199	0.000563 mg/Kg		03/10/23 15:05	03/15/23 12:46	1
m-Xylene & p-Xylene	<0.00101	U	0.00398	0.00101 mg/Kg		03/10/23 15:05	03/15/23 12:46	1
o-Xylene	<0.000343	U	0.00199	0.000343 mg/Kg		03/10/23 15:05	03/15/23 12:46	1
Xylenes, Total	<0.00101	U	0.00398	0.00101 mg/Kg		03/10/23 15:05	03/15/23 12:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	03/10/23 15:05	03/15/23 12:46	1
1,4-Difluorobenzene (Surr)	93		70 - 130	03/10/23 15:05	03/15/23 12:46	1

Euofins Midland

Client Sample Results

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Client Sample ID: SW-7

Lab Sample ID: 880-25403-2

Date Collected: 03/02/23 13:20

Matrix: Solid

Date Received: 03/03/23 08:20

Sample Depth: 0-4 ft

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00398	0.00101 mg/Kg			03/15/23 15:50	1

Method: TCEQ TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12 Range Hydrocarbons	20.3	J	50.0	15.0 mg/Kg		03/06/23 08:31	03/06/23 12:36	1
>C12-C28 Range Hydrocarbons	18.7	J	50.0	15.0 mg/Kg		03/06/23 08:31	03/06/23 12:36	1
>C28-C35 Range Hydrocarbons	<15.0	U	50.0	15.0 mg/Kg		03/06/23 08:31	03/06/23 12:36	1
Total Petroleum Hydrocarbons (C6-C35)	39.0	J	50.0	15.0 mg/Kg			03/07/23 14:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	112		70 - 130	03/06/23 08:31	03/06/23 12:36	1
o-Terphenyl (Surr)	109		70 - 130	03/06/23 08:31	03/06/23 12:36	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	142		5.00	0.395 mg/Kg			03/05/23 19:39	1

Client Sample ID: FS-15

Lab Sample ID: 880-25403-3

Date Collected: 03/02/23 13:15

Matrix: Solid

Date Received: 03/03/23 08:20

Sample Depth: 4 ft

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000383	U	0.00199	0.000383 mg/Kg		03/10/23 15:05	03/15/23 13:06	1
Toluene	<0.000453	U	0.00199	0.000453 mg/Kg		03/10/23 15:05	03/15/23 13:06	1
Ethylbenzene	<0.000562	U	0.00199	0.000562 mg/Kg		03/10/23 15:05	03/15/23 13:06	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100 mg/Kg		03/10/23 15:05	03/15/23 13:06	1
o-Xylene	<0.000342	U	0.00199	0.000342 mg/Kg		03/10/23 15:05	03/15/23 13:06	1
Xylenes, Total	<0.00100	U	0.00398	0.00100 mg/Kg		03/10/23 15:05	03/15/23 13:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130	03/10/23 15:05	03/15/23 13:06	1
1,4-Difluorobenzene (Surr)	93		70 - 130	03/10/23 15:05	03/15/23 13:06	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00398	0.00100 mg/Kg			03/15/23 15:50	1

Method: TCEQ TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12 Range Hydrocarbons	<15.0	U	49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 12:58	1
>C12-C28 Range Hydrocarbons	22.8	J	49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 12:58	1
>C28-C35 Range Hydrocarbons	<15.0	U	49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 12:58	1
Total Petroleum Hydrocarbons (C6-C35)	22.8	J	49.9	15.0 mg/Kg			03/07/23 14:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	93		70 - 130	03/06/23 08:31	03/06/23 12:58	1
o-Terphenyl (Surr)	87		70 - 130	03/06/23 08:31	03/06/23 12:58	1

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Client Sample Results

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Client Sample ID: FS-15

Lab Sample ID: 880-25403-3

Date Collected: 03/02/23 13:15

Matrix: Solid

Date Received: 03/03/23 08:20

Sample Depth: 4 ft

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	227		4.95	0.391 mg/Kg			03/05/23 19:44	1

Client Sample ID: BG-N

Lab Sample ID: 880-25403-4

Date Collected: 03/02/23 12:00

Matrix: Solid

Date Received: 03/03/23 08:20

Sample Depth: 0-1 ft

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000384	U	0.00200	0.000384 mg/Kg		03/10/23 15:05	03/15/23 13:26	1
Toluene	<0.000455	U	0.00200	0.000455 mg/Kg		03/10/23 15:05	03/15/23 13:26	1
Ethylbenzene	<0.000564	U	0.00200	0.000564 mg/Kg		03/10/23 15:05	03/15/23 13:26	1
m-Xylene & p-Xylene	<0.00101	U	0.00399	0.00101 mg/Kg		03/10/23 15:05	03/15/23 13:26	1
o-Xylene	<0.000343	U	0.00200	0.000343 mg/Kg		03/10/23 15:05	03/15/23 13:26	1
Xylenes, Total	<0.00101	U	0.00399	0.00101 mg/Kg		03/10/23 15:05	03/15/23 13:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130			03/10/23 15:05	03/15/23 13:26	1
1,4-Difluorobenzene (Surr)	90		70 - 130			03/10/23 15:05	03/15/23 13:26	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00399	0.00101 mg/Kg			03/15/23 15:50	1

Method: TCEQ TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C12 Range Hydrocarbons	26.2	J	49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 13:19	1
>C12-C28 Range Hydrocarbons	144		49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 13:19	1
>C28-C35 Range Hydrocarbons	<15.0	U	49.9	15.0 mg/Kg		03/06/23 08:31	03/06/23 13:19	1
Total Petroleum Hydrocarbons (C6-C35)	170		49.9	15.0 mg/Kg			03/07/23 14:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane (Surr)	114		70 - 130			03/06/23 08:31	03/06/23 13:19	1
o-Terphenyl (Surr)	111		70 - 130			03/06/23 08:31	03/06/23 13:19	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26400		249	19.6 mg/Kg			03/05/23 19:59	50

Surrogate Summary

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
880-25403-1	SW-5	96	91
880-25403-1 MS	SW-5	100	103
880-25403-1 MSD	SW-5	89	90
880-25403-2	SW-7	102	93
880-25403-3	FS-15	98	93
880-25403-4	BG-N	94	90
LCS 880-48339/1-A	Lab Control Sample	103	104
LCS 880-48339/2-A	Lab Control Sample Dup	106	104
MB 880-48339/5-A	Method Blank	93	89

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO (70-130)	OTPH (70-130)
880-25403-1	SW-5	108	104
880-25403-1 MS	SW-5	128	110
880-25403-1 MSD	SW-5	129	111
880-25403-2	SW-7	112	109
880-25403-3	FS-15	93	87
880-25403-4	BG-N	114	111
LCS 880-47871/2-A	Lab Control Sample	93	86
LCS 880-47871/3-A	Lab Control Sample Dup	99	93
MB 880-47871/1-A	Method Blank	118	117

Surrogate Legend

1CO = 1-Chlorooctane (Surr)

OTPH = o-Terphenyl (Surr)

QC Sample Results

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-48339/5-A
Matrix: Solid
Analysis Batch: 48640

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 48339

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385 mg/Kg		03/10/23 15:05	03/15/23 11:56	1
Toluene	<0.000456	U	0.00200	0.000456 mg/Kg		03/10/23 15:05	03/15/23 11:56	1
Ethylbenzene	<0.000565	U	0.00200	0.000565 mg/Kg		03/10/23 15:05	03/15/23 11:56	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101 mg/Kg		03/10/23 15:05	03/15/23 11:56	1
o-Xylene	<0.000344	U	0.00200	0.000344 mg/Kg		03/10/23 15:05	03/15/23 11:56	1
Xylenes, Total	<0.00101	U	0.00400	0.00101 mg/Kg		03/10/23 15:05	03/15/23 11:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	03/10/23 15:05	03/15/23 11:56	1
1,4-Difluorobenzene (Surr)	89		70 - 130	03/10/23 15:05	03/15/23 11:56	1

Lab Sample ID: LCS 880-48339/1-A
Matrix: Solid
Analysis Batch: 48640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 48339

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1011		mg/Kg		101	70 - 130
Toluene	0.100	0.1008		mg/Kg		101	70 - 130
Ethylbenzene	0.100	0.09773		mg/Kg		98	70 - 130
m-Xylene & p-Xylene	0.200	0.2004		mg/Kg		100	70 - 130
o-Xylene	0.100	0.09975		mg/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: LCSD 880-48339/2-A
Matrix: Solid
Analysis Batch: 48640

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 48339

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.09453		mg/Kg		95	70 - 130	7	35
Toluene	0.100	0.1005		mg/Kg		101	70 - 130	0	35
Ethylbenzene	0.100	0.09562		mg/Kg		96	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1956		mg/Kg		98	70 - 130	2	35
o-Xylene	0.100	0.09785		mg/Kg		98	70 - 130	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 880-25403-1 MS
Matrix: Solid
Analysis Batch: 48640

Client Sample ID: SW-5
Prep Type: Total/NA
Prep Batch: 48339

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.000388	U	0.100	0.09814		mg/Kg		98	70 - 130
Toluene	<0.000460	U	0.100	0.09859		mg/Kg		98	70 - 130

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QC Sample Results

Client: Ensolium
 Project/Site: PAW Swap12 36

Job ID: 880-25403-1
 SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-25403-1 MS
 Matrix: Solid
 Analysis Batch: 48640

Client Sample ID: SW-5
 Prep Type: Total/NA
 Prep Batch: 48339

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Ethylbenzene	<0.000570	U	0.100	0.09291		mg/Kg		93	70 - 130
m-Xylene & p-Xylene	<0.00102	U	0.201	0.1886		mg/Kg		94	70 - 130
o-Xylene	0.000359	J	0.100	0.09407		mg/Kg		93	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 880-25403-1 MSD
 Matrix: Solid
 Analysis Batch: 48640

Client Sample ID: SW-5
 Prep Type: Total/NA
 Prep Batch: 48339

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzene	<0.000388	U	0.0990	0.07064		mg/Kg		71	70 - 130	33	35
Toluene	<0.000460	U	0.0990	0.08322		mg/Kg		84	70 - 130	17	35
Ethylbenzene	<0.000570	U	0.0990	0.07848		mg/Kg		79	70 - 130	17	35
m-Xylene & p-Xylene	<0.00102	U	0.198	0.1560		mg/Kg		79	70 - 130	19	35
o-Xylene	0.000359	J	0.0990	0.07730		mg/Kg		78	70 - 130	20	35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC)

Lab Sample ID: MB 880-47871/1-A
 Matrix: Solid
 Analysis Batch: 47861

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 47871

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
C6-C12 Range Hydrocarbons	<15.0	U	50.0	15.0 mg/Kg		03/06/23 08:31	03/06/23 09:05	1
>C12-C28 Range Hydrocarbons	<15.0	U	50.0	15.0 mg/Kg		03/06/23 08:31	03/06/23 09:05	1
>C28-C35 Range Hydrocarbons	<15.0	U	50.0	15.0 mg/Kg		03/06/23 08:31	03/06/23 09:05	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane (Surr)	118		70 - 130	03/06/23 08:31	03/06/23 09:05	1
o-Terphenyl (Surr)	117		70 - 130	03/06/23 08:31	03/06/23 09:05	1

Lab Sample ID: LCS 880-47871/2-A
 Matrix: Solid
 Analysis Batch: 47861

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 47871

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
C6-C12 Range Hydrocarbons	1000	1053		mg/Kg		105	75 - 125
>C12-C28 Range Hydrocarbons	1000	881.4		mg/Kg		88	75 - 125

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1-Chlorooctane (Surr)	93		70 - 130

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QC Sample Results

Client: Ensolium
 Project/Site: PAW Swap12 36

Job ID: 880-25403-1
 SDG: Lea County, NM

Method: TX 1005 - Texas - Total Petroleum Hydrocarbon (GC) (Continued)

Lab Sample ID: LCS 880-47871/2-A
 Matrix: Solid
 Analysis Batch: 47861

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 47871

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl (Surr)	86		70 - 130

Lab Sample ID: LCSD 880-47871/3-A
 Matrix: Solid
 Analysis Batch: 47861

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 47871

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec		RPD	Limit
		Result	Qualifier				Limits	RPD		
C6-C12 Range Hydrocarbons	1000	1141		mg/Kg		114	75 - 125	8		25
>C12-C28 Range Hydrocarbons	1000	951.7		mg/Kg		95	75 - 125	8		25

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane (Surr)	99		70 - 130
<i>o</i> -Terphenyl (Surr)	93		70 - 130

Lab Sample ID: 880-25403-1 MS
 Matrix: Solid
 Analysis Batch: 47861

Client Sample ID: SW-5
 Prep Type: Total/NA
 Prep Batch: 47871

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	RPD
C6-C12 Range Hydrocarbons	21.6	J	998	1091		mg/Kg		107	75 - 125	
>C12-C28 Range Hydrocarbons	22.5	J	998	994.1		mg/Kg		97	75 - 125	

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1-Chlorooctane (Surr)	128		70 - 130
<i>o</i> -Terphenyl (Surr)	110		70 - 130

Lab Sample ID: 880-25403-1 MSD
 Matrix: Solid
 Analysis Batch: 47861

Client Sample ID: SW-5
 Prep Type: Total/NA
 Prep Batch: 47871

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
C6-C12 Range Hydrocarbons	21.6	J	999	1112		mg/Kg		109	75 - 125	2		25
>C12-C28 Range Hydrocarbons	22.5	J	999	1014		mg/Kg		99	75 - 125	2		25

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane (Surr)	129		70 - 130
<i>o</i> -Terphenyl (Surr)	111		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-47779/1-A
 Matrix: Solid
 Analysis Batch: 47847

Client Sample ID: Method Blank
 Prep Type: Soluble

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<0.395	U	5.00	0.395 mg/Kg			03/05/23 19:00	1

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QC Sample Results

Client: Ensolum
 Project/Site: PAW Swap12 36

Job ID: 880-25403-1
 SDG: Lea County, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-47779/2-A
 Matrix: Solid
 Analysis Batch: 47847

Client Sample ID: Lab Control Sample
 Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	268.3		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-47779/3-A
 Matrix: Solid
 Analysis Batch: 47847

Client Sample ID: Lab Control Sample Dup
 Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	268.7		mg/Kg		107	90 - 110	0	20

Lab Sample ID: MB 880-48498/1-A
 Matrix: Solid
 Analysis Batch: 48669

Client Sample ID: Method Blank
 Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395 mg/Kg			03/15/23 21:54	1

Lab Sample ID: LCS 880-48498/2-A
 Matrix: Solid
 Analysis Batch: 48669

Client Sample ID: Lab Control Sample
 Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	266.0		mg/Kg		106	90 - 110

Lab Sample ID: LCSD 880-48498/3-A
 Matrix: Solid
 Analysis Batch: 48669

Client Sample ID: Lab Control Sample Dup
 Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	266.4		mg/Kg		107	90 - 110	0	20

QC Association Summary

Client: Ensolum
 Project/Site: PAW Swap12 36

Job ID: 880-25403-1
 SDG: Lea County, NM

GC VOA

Prep Batch: 48339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-1	SW-5	Total/NA	Solid	5035	
880-25403-2	SW-7	Total/NA	Solid	5035	
880-25403-3	FS-15	Total/NA	Solid	5035	
880-25403-4	BG-N	Total/NA	Solid	5035	
MB 880-48339/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-48339/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-48339/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-25403-1 MS	SW-5	Total/NA	Solid	5035	
880-25403-1 MSD	SW-5	Total/NA	Solid	5035	

Analysis Batch: 48640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-1	SW-5	Total/NA	Solid	8021B	48339
880-25403-2	SW-7	Total/NA	Solid	8021B	48339
880-25403-3	FS-15	Total/NA	Solid	8021B	48339
880-25403-4	BG-N	Total/NA	Solid	8021B	48339
MB 880-48339/5-A	Method Blank	Total/NA	Solid	8021B	48339
LCS 880-48339/1-A	Lab Control Sample	Total/NA	Solid	8021B	48339
LCSD 880-48339/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	48339
880-25403-1 MS	SW-5	Total/NA	Solid	8021B	48339
880-25403-1 MSD	SW-5	Total/NA	Solid	8021B	48339

Analysis Batch: 48684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-1	SW-5	Total/NA	Solid	Total BTEX	
880-25403-2	SW-7	Total/NA	Solid	Total BTEX	
880-25403-3	FS-15	Total/NA	Solid	Total BTEX	
880-25403-4	BG-N	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 47861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-1	SW-5	Total/NA	Solid	TX 1005	47871
880-25403-2	SW-7	Total/NA	Solid	TX 1005	47871
880-25403-3	FS-15	Total/NA	Solid	TX 1005	47871
880-25403-4	BG-N	Total/NA	Solid	TX 1005	47871
MB 880-47871/1-A	Method Blank	Total/NA	Solid	TX 1005	47871
LCS 880-47871/2-A	Lab Control Sample	Total/NA	Solid	TX 1005	47871
LCSD 880-47871/3-A	Lab Control Sample Dup	Total/NA	Solid	TX 1005	47871
880-25403-1 MS	SW-5	Total/NA	Solid	TX 1005	47871
880-25403-1 MSD	SW-5	Total/NA	Solid	TX 1005	47871

Prep Batch: 47871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-1	SW-5	Total/NA	Solid	TX_1005_S_Pre p	
880-25403-2	SW-7	Total/NA	Solid	TX_1005_S_Pre p	
880-25403-3	FS-15	Total/NA	Solid	TX_1005_S_Pre p	

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QC Association Summary

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

GC Semi VOA (Continued)

Prep Batch: 47871 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-4	BG-N	Total/NA	Solid	TX_1005_S_Pre p	
MB 880-47871/1-A	Method Blank	Total/NA	Solid	TX_1005_S_Pre p	
LCS 880-47871/2-A	Lab Control Sample	Total/NA	Solid	TX_1005_S_Pre p	
LCSD 880-47871/3-A	Lab Control Sample Dup	Total/NA	Solid	TX_1005_S_Pre p	
880-25403-1 MS	SW-5	Total/NA	Solid	TX_1005_S_Pre p	
880-25403-1 MSD	SW-5	Total/NA	Solid	TX_1005_S_Pre p	

Analysis Batch: 48055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-1	SW-5	Total/NA	Solid	TX 1005	
880-25403-2	SW-7	Total/NA	Solid	TX 1005	
880-25403-3	FS-15	Total/NA	Solid	TX 1005	
880-25403-4	BG-N	Total/NA	Solid	TX 1005	

HPLC/IC

Leach Batch: 47779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-2	SW-7	Soluble	Solid	DI Leach	
880-25403-3	FS-15	Soluble	Solid	DI Leach	
880-25403-4	BG-N	Soluble	Solid	DI Leach	
MB 880-47779/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-47779/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-47779/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 47847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-2	SW-7	Soluble	Solid	300.0	47779
880-25403-3	FS-15	Soluble	Solid	300.0	47779
880-25403-4	BG-N	Soluble	Solid	300.0	47779
MB 880-47779/1-A	Method Blank	Soluble	Solid	300.0	47779
LCS 880-47779/2-A	Lab Control Sample	Soluble	Solid	300.0	47779
LCSD 880-47779/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	47779

Leach Batch: 48498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-1	SW-5	Soluble	Solid	DI Leach	
MB 880-48498/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-48498/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-48498/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 48669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-25403-1	SW-5	Soluble	Solid	300.0	48498
MB 880-48498/1-A	Method Blank	Soluble	Solid	300.0	48498
LCS 880-48498/2-A	Lab Control Sample	Soluble	Solid	300.0	48498
LCSD 880-48498/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	48498

Eurofins Midland

Lab Chronicle

Client: Ensolum
 Project/Site: PAW Swap12 36

Job ID: 880-25403-1
 SDG: Lea County, NM

Client Sample ID: SW-5

Lab Sample ID: 880-25403-1

Date Collected: 03/02/23 14:15

Matrix: Solid

Date Received: 03/03/23 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			48339	MNR	EET MID	03/10/23 15:05
Total/NA	Analysis	8021B		1	48640	AJ	EET MID	03/15/23 12:25
Total/NA	Analysis	Total BTEX		1	48684	AJ	EET MID	03/15/23 15:50
Total/NA	Prep	TX_1005_S_Prep			47871	AJ	EET MID	03/06/23 08:31
Total/NA	Analysis	TX 1005		1	47861	SM	EET MID	03/06/23 11:33
Total/NA	Analysis	TX 1005		1	48055	SM	EET MID	03/07/23 14:03
Soluble	Leach	DI Leach			48498	KS	EET MID	03/13/23 14:00
Soluble	Analysis	300.0		1	48669	SMC	EET MID	03/15/23 22:52

Client Sample ID: SW-7

Lab Sample ID: 880-25403-2

Date Collected: 03/02/23 13:20

Matrix: Solid

Date Received: 03/03/23 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			48339	MNR	EET MID	03/10/23 15:05
Total/NA	Analysis	8021B		1	48640	AJ	EET MID	03/15/23 12:46
Total/NA	Analysis	Total BTEX		1	48684	AJ	EET MID	03/15/23 15:50
Total/NA	Prep	TX_1005_S_Prep			47871	AJ	EET MID	03/06/23 08:31
Total/NA	Analysis	TX 1005		1	47861	SM	EET MID	03/06/23 12:36
Total/NA	Analysis	TX 1005		1	48055	SM	EET MID	03/07/23 14:03
Soluble	Leach	DI Leach			47779	CH	EET MID	03/03/23 16:05
Soluble	Analysis	300.0		1	47847	CH	EET MID	03/05/23 19:39

Client Sample ID: FS-15

Lab Sample ID: 880-25403-3

Date Collected: 03/02/23 13:15

Matrix: Solid

Date Received: 03/03/23 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			48339	MNR	EET MID	03/10/23 15:05
Total/NA	Analysis	8021B		1	48640	AJ	EET MID	03/15/23 13:06
Total/NA	Analysis	Total BTEX		1	48684	AJ	EET MID	03/15/23 15:50
Total/NA	Prep	TX_1005_S_Prep			47871	AJ	EET MID	03/06/23 08:31
Total/NA	Analysis	TX 1005		1	47861	SM	EET MID	03/06/23 12:58
Total/NA	Analysis	TX 1005		1	48055	SM	EET MID	03/07/23 14:03
Soluble	Leach	DI Leach			47779	CH	EET MID	03/03/23 16:05
Soluble	Analysis	300.0		1	47847	CH	EET MID	03/05/23 19:44

Client Sample ID: BG-N

Lab Sample ID: 880-25403-4

Date Collected: 03/02/23 12:00

Matrix: Solid

Date Received: 03/03/23 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			48339	MNR	EET MID	03/10/23 15:05
Total/NA	Analysis	8021B		1	48640	AJ	EET MID	03/15/23 13:26
Total/NA	Analysis	Total BTEX		1	48684	AJ	EET MID	03/15/23 15:50

Eurofins Midland

Lab Chronicle

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Client Sample ID: BG-N

Lab Sample ID: 880-25403-4

Date Collected: 03/02/23 12:00

Matrix: Solid

Date Received: 03/03/23 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	TX_1005_S_Prep			47871	AJ	EET MID	03/06/23 08:31
Total/NA	Analysis	TX 1005		1	47861	SM	EET MID	03/06/23 13:19
Total/NA	Analysis	TX 1005		1	48055	SM	EET MID	03/07/23 14:03
Soluble	Leach	DI Leach			47779	CH	EET MID	03/03/23 16:05
Soluble	Analysis	300.0		50	47847	CH	EET MID	03/05/23 19:59

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX

- 1
- 2
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Method Summary

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
TX 1005	Texas - Total Petroleum Hydrocarbon (GC)	TCEQ	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID
TX_1005_S_Prep	Extraction - Texas Total petroleum Hyrdocarbons	TCEQ	EET MID

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure
- TCEQ = Texas Commission of Environmental Quality

Laboratory References:

- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Sample Summary

Client: Ensolum
Project/Site: PAW Swap12 36

Job ID: 880-25403-1
SDG: Lea County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-25403-1	SW-5	Solid	03/02/23 14:15	03/03/23 08:20	0-4 ft
880-25403-2	SW-7	Solid	03/02/23 13:20	03/03/23 08:20	0-4 ft
880-25403-3	FS-15	Solid	03/02/23 13:15	03/03/23 08:20	4 ft
880-25403-4	BG-N	Solid	03/02/23 12:00	03/03/23 08:20	0-1 ft

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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 880-25403-1
SDG Number: Lea County, NM

Login Number: 25403
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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

March 17, 2023

BEAUX JENNINGS
ENSOLUM, LLC
705 W WADLEY AVE.
MIDLAND, TX 79705

RE: BAW SWAP 12-36 FED COM 0011H

Enclosed are the results of analyses for samples received by the laboratory on 03/14/23 16:14.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene
Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 BEAUX JENNINGS
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	03/14/2023	Sampling Date:	03/13/2023
Reported:	03/17/2023	Sampling Type:	Soil
Project Name:	BAW SWAP 12-36 FED COM 0011H	Sampling Condition:	Cool & Intact
Project Number:	03B1417075	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY - 32.398481,-103.63161115		

Sample ID: FS - 16 6' (H231171-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	03/15/2023	ND	400	100	400	0.00	

Sample ID: BG - N 0-1' (H231171-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	03/15/2023	ND	400	100	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Form with sections: COMPANY NAME, PROJECT MANAGER, ADDRESS, PHONE, PROJECT #, PROJECT NAME, PROJECT LOCATION, SAMPLER NAME, BILL TO, ANALYSIS REQUEST, and a large table for sample data with columns for Lab I.D., Sample I.D., Sample Depth, Matrix, Preserv., and Sampling.

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.

Form with sections: Relinquished By, Received By, Verbal Result, Remarks, Delivered By, Sample Condition, Checked By, Turnaround Time, and Bacteria (only) Sample Condition.

FORM-006 R 3.2 10/07/21

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



APPENDIX F

C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAPP2304537144
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Oxy USA Inc.	OGRID: 16696
Contact Name: Tyson Pierce	Contact Telephone: 575-390-3610
Contact email: tyson_pierce@oxy.com	Incident # nAPP2304537144
Contact mailing address: PO Box 4294, Houston, TX 77210	

Location of Release Source

Latitude 32.3984851 Longitude -103.63161115
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Paw Swap 12 36 Fed Com #0011H	Site Type: Water Transfer Line
Date Release Discovered: 02/02/2023	API# (if applicable)

Unit Letter	Section	Township	Range	County
C	13	22S	32E	Lea

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls):	Volume Recovered (bbls):
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 27	Volume Recovered (bbls): 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Water transfer line failure.

Incident ID	nAPP2304537144
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release is greater than 25 barrels.
---	---

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
 Yes, by Wade Dittrich of Oxy via email to OCD.enviro@emnrd.nm.gov and BLM_NM_CFO_Spill@blm.gov on 02/06/2023 at 0924.

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.
- The impacted area has been secured to protect human health and the environment.
- Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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.

Printed Name: Tyson Pierce Title: Environmental Specialist
 Signature:  Date: 4/18/23
 email: tyson_pierce@oxy.com Telephone: 575-390-3610

OCD Only
 Received by: _____ Date: _____

Incident ID	nAPP2304537144
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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?	<u> N/A </u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2304537144
District RP	
Facility ID	
Application ID	

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.

Printed Name: Tyson Pierce

Title: Environmental Specialist

Signature: 

Date: 4/18/23

email: tyson_pierce@oxy.com

Telephone: 575-390-3610

OCD Only

Received by: Jocelyn Harimon

Date: 04/18/2023

Released to Imaging: 6/30/2023 2:22:19 PM

Incident ID	nAPP2304537144
District RP	
Facility ID	
Application ID	

Received by OCD: 4/18/2023 9:51:44 AM

Closure

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 (electronic submittals in .pdf format are preferred) 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.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

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.

Printed Name: Tyson Pierce

Title: Environmental Specialist

Signature: 

Date: 4/18/23

email: tyson_pierce@oxy.com

Telephone: 575-390-3610

OCD Only

Received by: Jocelyn Harimon

Date: 04/18/2023

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Nelson Velez

Date: 06/30/2023

Printed Name: Nelson Velez

Title: Environmental Specialist – Adv

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

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 208681

CONDITIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 208681
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	6/30/2023