



## REVISED CLOSURE REPORT

Property:

**Sundance SDS 11-1 SWD**

**Eddy County, New Mexico  
32.228333 N, 103.731944 W  
NMOCD Incident ID: nAPP2224356841**


December 1, 2023  
Ensolum Project No. 03B1417061

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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**Eddy County, New Mexico  
32.228333 N, 103.731944  
NMOCD Incident ID: nAPP2224356841**

**Ensolum Project No. 03B1417061**

### 1.0 INTRODUCTION

#### 1.1 Executive Summary

- On August 30, 2022, a release of produced water was reported from a 4" poly line failure at the Sundance SDS 11-1 SWD, hereinafter referred to as the "Site". Approximately 50 barrels (bbls) of produced water were released onto the caliche road and impacted an area approximately 560 feet long by 20 to 70 feet wide. The line was repaired, and Oxy USA Inc. (Oxy) contracted Ensolum, LLC (Ensolum) to perform sampling of the approximate spill location at the Site.
- On September 27, 2022, in order to initially assess the nature and extent of the release, Ensolum arrived on-Site and collected a total of 4 composite soil samples (FS-1 through FS-4) from locations within the impacted area. In addition, Ensolum collected 4 soil samples (North, East, South and West) in each direction outside of the impacted area in order to delineate the potentially impacted soils. The composite soil samples were collected from depths ranging from 0-2 feet below ground surface (bgs).
- Due to the unknown depth to groundwater in the 0.5-mile vicinity, a depth to water soil boring (SB-1 (C-04687-POD1)) was installed on November 29, 2022 by Ensolum personnel. The soil boring was installed adjacent to the release area. The soil boring was installed to 112.53 feet bgs, and groundwater was not encountered 72-hours after the soil boring was installed. The applicable Closure Criteria were utilized based on the lack of groundwater observed within the first 112.53 feet bgs at the Site.
- On December 28, 2022, Ensolum returned to the Site and collected a total of 18 composite soil samples (FS-5 through FS-22) from locations within the impacted area. The composite soil samples were collected at a depth of 0-0.25 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 (ENMRD) Oil Conservation Division (OCD) Closure Criteria for Soils Impacted by a Release using the New Mexico Administrative Code (NMAC) 19.15.29 *Releases* as guidance.
- On January 24, 2023 a Closure Report was submitted to the New Mexico ENMRD OCD for approval.
- On February 13, 2023 the New Mexico ENMRD OCD rejected the Closure Report. Steps were subsequently taken by Oxy to address the requirements needed for closure.

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- Based on the request from the New Mexico EMRD OCD, composite samples FS-8 through FS-22 were collected on September 14, 2023, from depths ranging from 0.25-0.50 feet bgs.
- Based on analytical results, Ensolum returned to the Site on October 11, 2023 to collect composite sample FS-9 from a depth interval of 0.50-0.75 feet bgs.
- The final excavation areas reached a maximum depth of 2 feet bgs.
- Based on the laboratory analytical results, the final composite soil samples did not exhibit benzene, toluene, ethylbenzene, and xylene (BTEX), total BTEX, total petroleum hydrocarbons (TPH), gasoline range organics (GRO), diesel range organics (DRO), motor oil range organics (MRO) or chloride concentrations above the applicable NMOCD Closure Criteria.

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

## 1.2 Site Description & Background

<b>Operator:</b>	Oxy USA Inc. (Oxy)
<b>Site Name:</b>	Sundance SDS 11-1 SWD
<b>Location:</b>	32.228333 N, 103.731944 W Eddy County, New Mexico
<b>Property:</b>	Bureau of Land Management (BLM)
<b>Regulatory:</b>	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

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 Bureau of Land Management (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	Method	Limit
≤ 50 feet	Chloride	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

### 3.0 SOIL REMEDIATION ACTIVITIES

On August 30, 2022, a release of produced water was reported from a 4" poly line failure at the Sundance SDS 11-1 SWD. Approximately 50 bbls of produced water were released onto the caliche road and impacted an area approximately 560 feet long by 20 to 70 feet wide. The line was repaired, and Oxy contracted Ensolum to perform sampling of the approximate spill location at the Site.

On September 27, 2022, in order to initially assess the nature and extent of the release, Ensolum arrived on-Site and collected a total of 4 composite soil samples (FS-1 through FS-4) from locations within the impacted area. In addition, Ensolum collected 4 soil samples (North, East, South and West) in each direction outside of the impacted area in order to delineate the potentially impacted soils. The composite soil samples were collected from depths ranging from 0-2 feet bgs.

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Due to the unknown depth to groundwater in the 0.5-mile vicinity, a depth to water soil boring (SB-1 (C-04687-POD1)) was installed on November 29, 2022 by Ensolum personnel. The soil boring was installed adjacent to the release area. The soil boring was installed to 112.53 feet bgs, and groundwater was not encountered 72-hours after the soil boring was installed. The applicable Closure Criteria were utilized based on the lack of groundwater observed within the first 112.53 feet bgs at the Site.

On December 28, 2022, Ensolum returned to the Site and collected a total of 18 composite soil samples (FS-5 through FS-22) from locations within the impacted area. The composite soil samples were collected at a depth of 0-0.25 feet bgs.

On September 14, 2023, composite samples FS-8 through FS-22 were collected from depths ranging from 0.25-0.50 feet bgs, after excavation activities.

Based on analytical results, Ensolum returned to the site on October 11, 2023 to collect composite sample FS-9 from a depth interval of 0.50-0.75 feet bgs.

**Figure 3** identifies approximate pothole 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 38 composite soil samples from 22 locations within the impacted area (FS-1 through FS-22), and 4 soil samples from 4 locations outside of the impacted area (North, East, South and West). The composite soil samples were collected from depths of 0-0.25 feet bgs, 0.25-0.50 feet bgs, 0.50-0.75 feet bgs or 1-2 feet bgs.

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 for standard 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.

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 benzene, total BTEX, TPH GRO/DRO/MRO, and chloride concentrations associated with the final composite soil samples collected from the impacted area (FS-1 through FS-22) and delimitation samples outside the impacted area (North, East, South and West) 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 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  $\leq 50$  feet.
- Laboratory analytical results indicate chloride concentrations for the composite soil samples are below the applicable NMOCD Closure Criteria of 600 mg/kg for  $\leq 50$  feet.

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

## 7.0 RECLAMATION AND RE-VEGETATION

Subsequent to the results of the composite soil sampling, it was determined that no further excavation or remediation was warranted at the Site. The spill area is a caliche road and requires no reclamation or re-vegetation.

## 8.0 FINDINGS AND RECOMMENDATION

- On August 30, 2022, a release of produced water was reported from a 4" poly line failure at the Sundance SDS 11-1 SWD. Approximately 50 bbls of produced water were released onto the caliche road and impacted an area approximately 560 feet long by 20 to 70 feet wide. The line was repaired, and Oxy contracted Ensolum to perform sampling of the approximate spill location at the Site.
- On September 27, 2022, in order to initially assess the nature and extent of the release, Ensolum arrived on-Site and collected a total of 4 composite soil samples (FS-1 through FS-4) from locations within the impacted area. In addition, Ensolum collected 4 soil samples (North, East, South and West) in each direction outside of the impacted area in order to delineate the potentially impacted soils. The composite soil samples were collected from depths ranging from 0-2 feet bgs.
- Due to the unknown depth to groundwater in the 0.5-mile vicinity, a depth to water soil boring (SB-1 (C-04687-POD1)) was installed on November 29, 2022 by Ensolum personnel. The soil boring was installed adjacent to the release area. The soil boring was installed to 112.53 feet bgs, and groundwater was not encountered 72-hours after the soil boring was installed. The applicable Closure Criteria were utilized based on the lack of groundwater observed within the first 112.53 feet bgs at the Site.
- On December 28, 2022, Ensolum returned to the Site and collected a total of 18 composite soil samples (FS-5 through FS-22) from locations within the impacted area. The composite soil samples were collected at a depth of 0-0.25 feet bgs.
- Based on the high vehicle traffic on the lease road and laboratory analytical results, no additional excavation or remediation was required at that time.
- 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 for Soils Impacted by a Release using the NMAC 19.15.29 *Releases* as guidance.
- On January 24, 2023 a Closure Report was submitted to the New Mexico ENMRD OCD for approval.
- On February 13, 2023 the New Mexico ENMRD OCD rejected the Closure Report. Steps were subsequently taken by Oxy to address the requirements needed for closure.

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- Based on analytical results, Ensolum returned to the Site on October 11, 2023 to collect composite sample FS-9 from a depth interval of 0.50-0.75 feet bgs.
- The final excavation areas reached a maximum depth of 2 feet bgs.
- Based on the laboratory analytical results, the final composite soil samples collected from the impacted area did not exhibit benzene, total BTEX, TPH GRO/DRO, TPH GRO/DRO/MRO or chloride concentrations above the applicable NMOCD Closure Criteria.

**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**

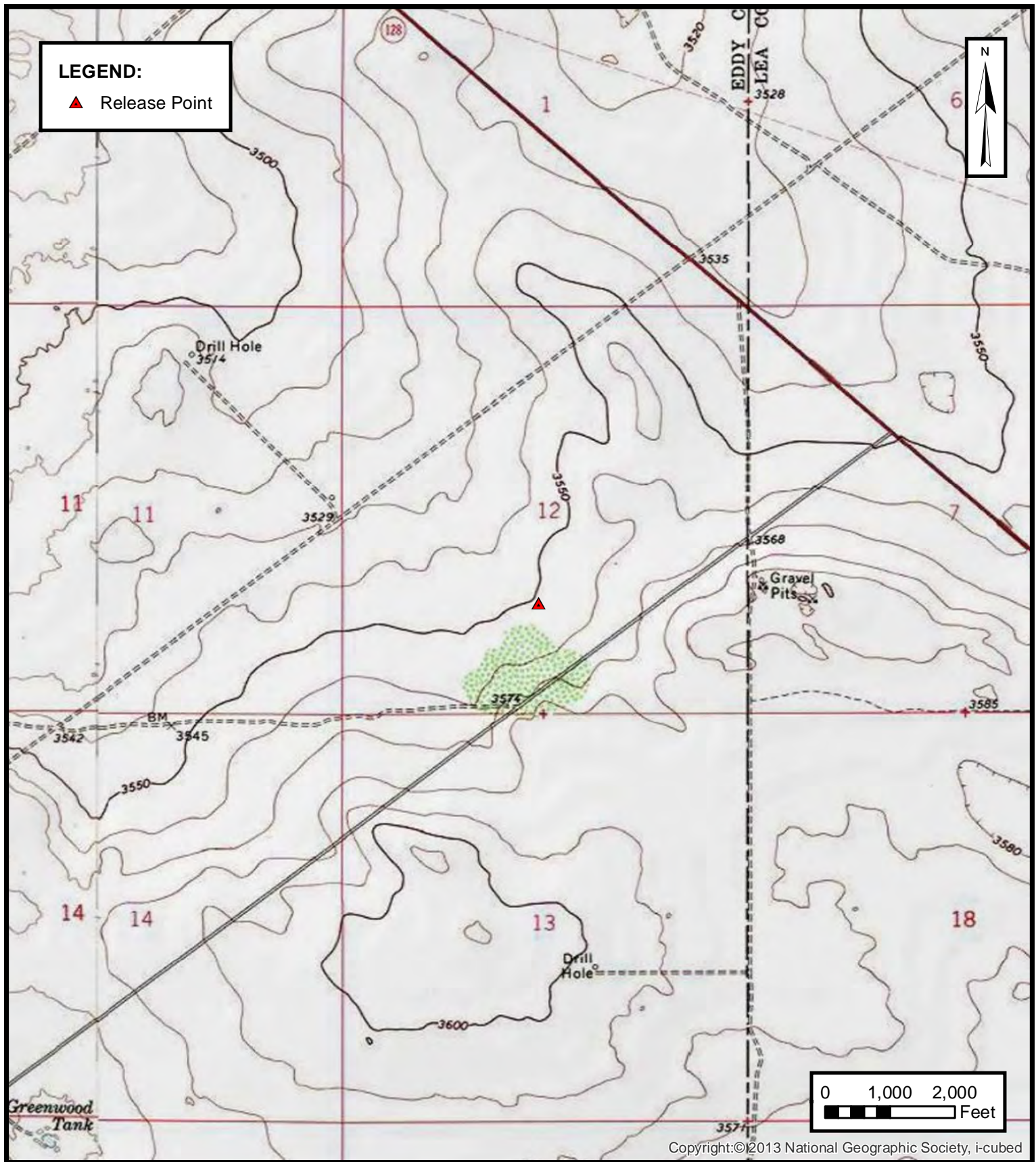
This report has been prepared for the exclusive use of Oxy USA, Inc., and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization Oxy USA, Inc. and Ensolum. Any unauthorized distribution 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



**TOPOGRAPHIC MAP**

OXY USA INC.  
 SUNDANCE SDS 11-1 SWD  
 Eddy County, New Mexico  
 32.228333° N, 103.731944° W

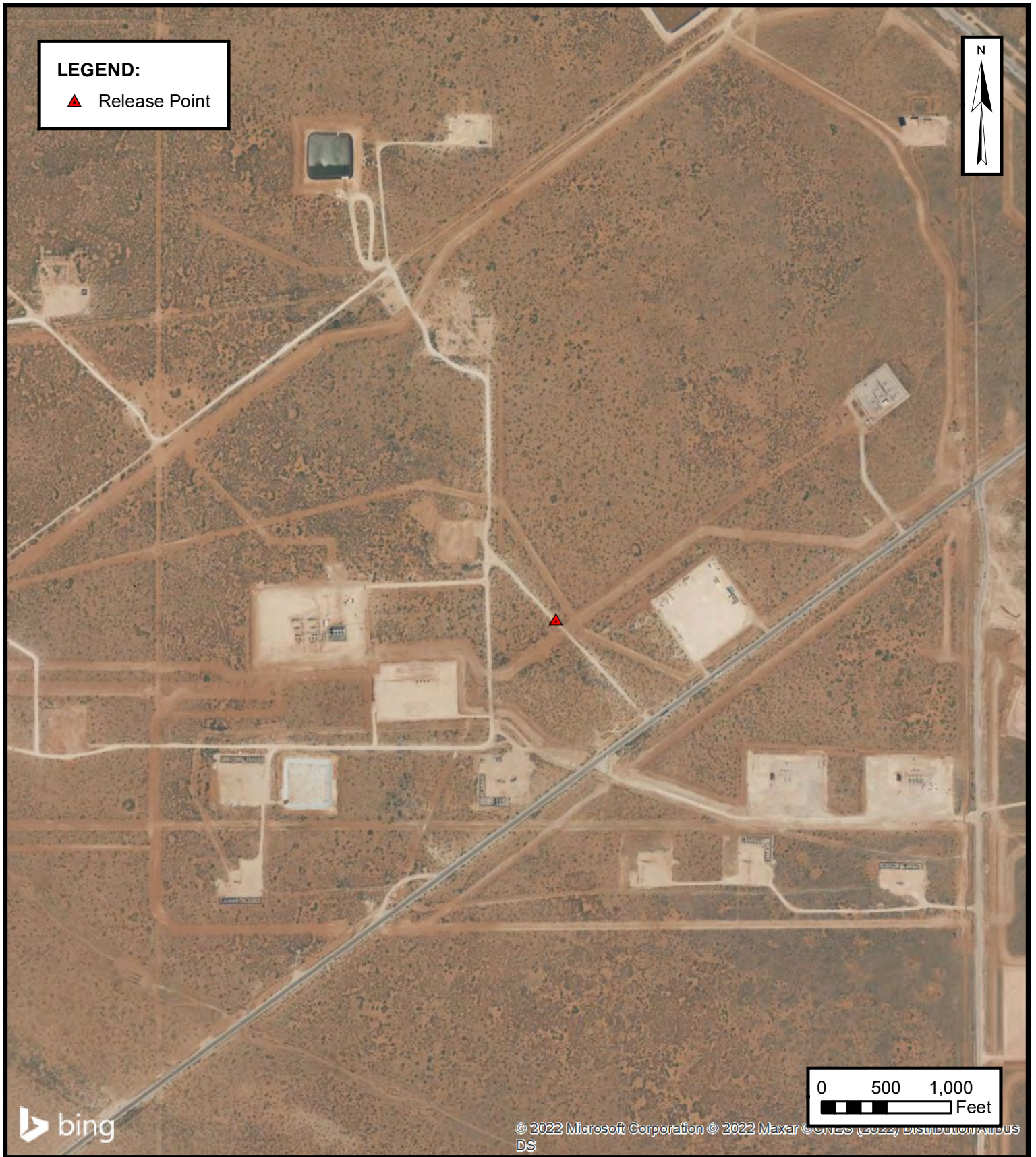
PROJECT NUMBER: 03B1417061

**FIGURE**

**1**

**ENSOLUM**  
 Environmental, Engineering and  
 Hydrogeologic Consultants





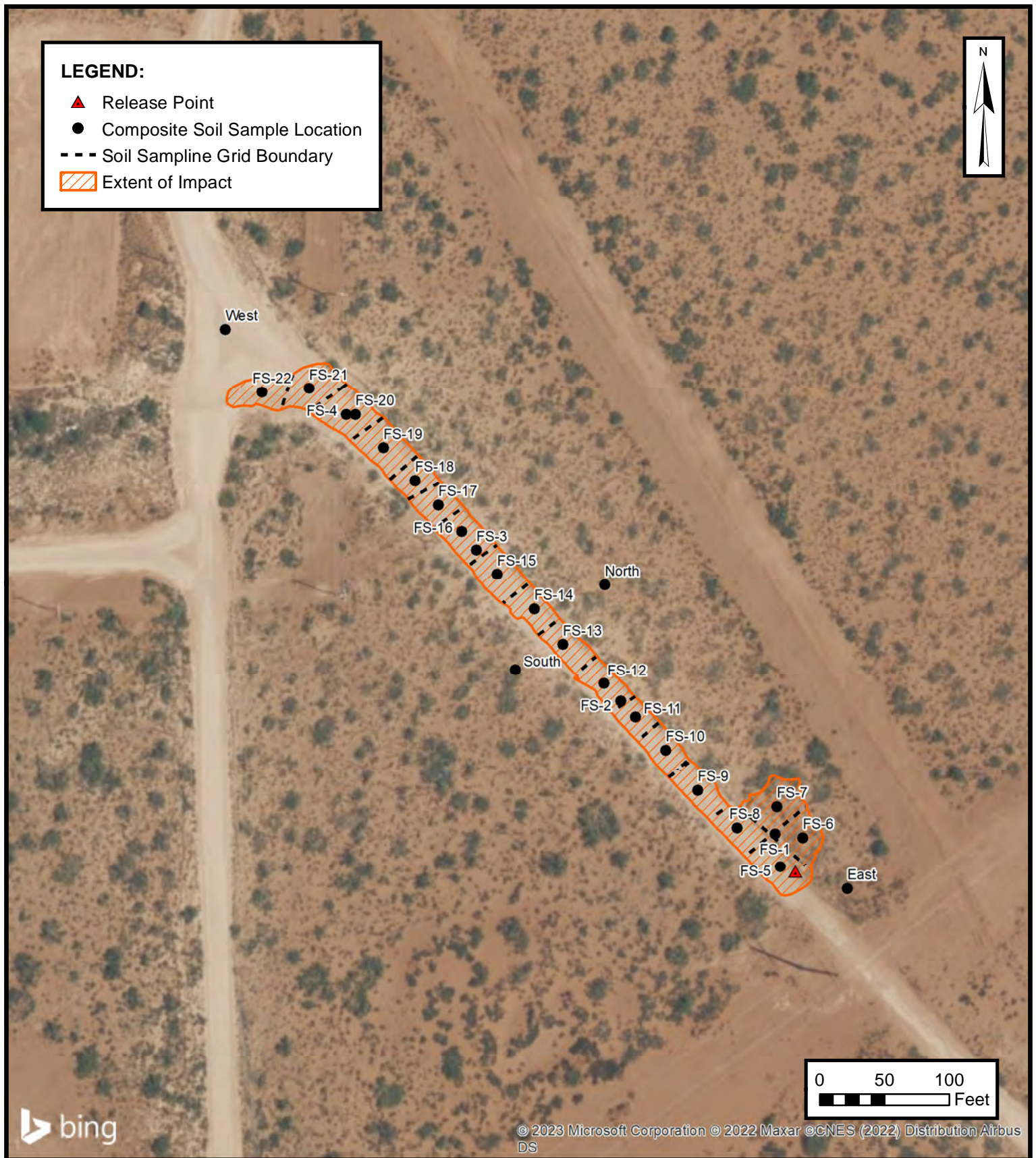
**SITE VICINITY MAP**

OXY USA INC.  
SUNDANCE SDS 11-1 SWD  
Eddy County, New Mexico  
32.228333° N, 103.731944° W

PROJECT NUMBER: 03B1417061

**FIGURE**  
**2**





### SITE MAP

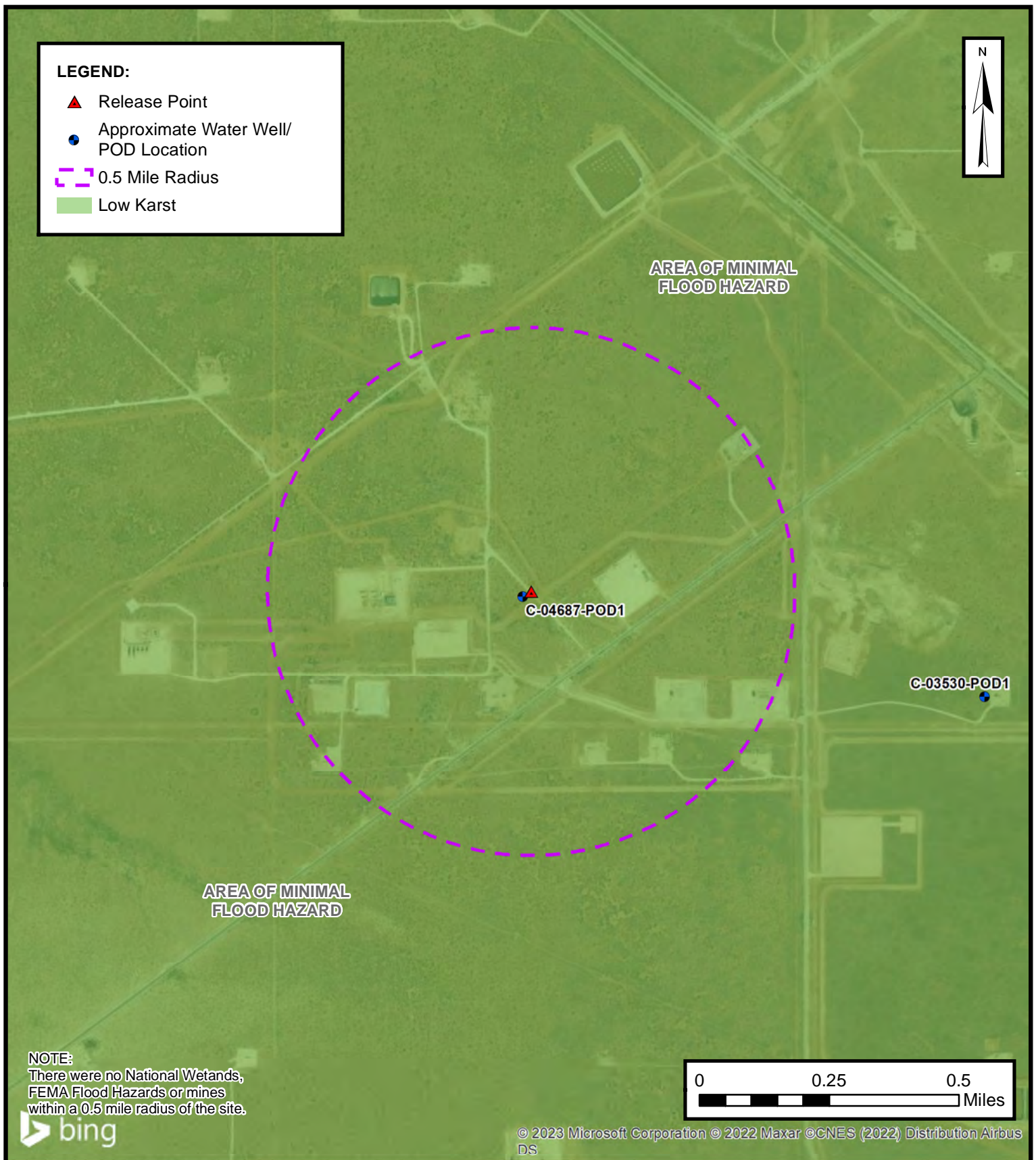
OXY USA INC.  
SUNDANCE SDS 11-1 SWD  
Eddy County, New Mexico  
32.228333° N, 103.731944° W

PROJECT NUMBER: 03B1417061

FIGURE

3



**CLOSURE CRITERIA MAP**

OXY USA INC.  
SUNDANCE SDS 11-1 SWD  
Eddy County, New Mexico  
32.228333° N, 103.731944° W

PROJECT NUMBER: 03B1417061

**FIGURE****4**

**ENSOLUM**  
Environmental, Engineering and  
Hydrogeologic Consultants



## APPENDIX B

### Supporting Documentation

**Beaux Jennings**

---

**From:** Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>  
**Sent:** Tuesday, September 12, 2023 2:31 PM  
**To:** Beaux Jennings  
**Cc:** Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD  
**Subject:** RE: [EXTERNAL] Sundance SDS 11-1 SWD (Incident # nAPP2224356841)

You don't often get email from shelly.wells@emnrd.nm.gov. [Learn why this is important](#)

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

Good afternoon Beaux,

The OCD has received your notification. Notification requirements are **two full business days**, per rule. You may proceed on your schedule. This, and all correspondence, should be included in the closure report to ensure inclusion in the project file.

Thank you,

Shelly

[Shelly Wells](#) \* Environmental Specialist-Advanced  
Environmental Bureau  
EMNRD-Oil Conservation Division  
1220 S. St. Francis Drive | Santa Fe, NM 87505  
(505)469-7520 | [Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov)  
<http://www.emnrd.state.nm.us/OCD/>

---

**From:** Beaux Jennings <bjennings@ensolum.com>  
**Sent:** Tuesday, September 12, 2023 12:47 PM  
**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>  
**Subject:** [EXTERNAL] Sundance SDS 11-1 SWD (Incident # nAPP2224356841)

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 Sundance SDS 11-1 SWD (Incident # nAPP2224356841) on Thursday, September 14<sup>th</sup>. 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](#) [t](#)

**Beaux Jennings**

---

**From:** Dittrich, John W <Wade\_Dittrich@oxy.com>  
**Sent:** Tuesday, February 14, 2023 9:01 AM  
**To:** Beaux Jennings  
**Subject:** FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 179033

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

Please review-Denied

---

**From:** OCDOnline@state.nm.us <OCDOnline@state.nm.us>  
**Sent:** Monday, February 13, 2023 2:32 PM  
**To:** Dittrich, John W <Wade\_Dittrich@oxy.com>  
**Subject:** [EXTERNAL] The Oil Conservation Division (OCD) has rejected the application, Application ID: 179033

**WARNING - This message is from an EXTERNAL SENDER - be CAUTIOUS, particularly with links and attachments.**

---

To whom it may concern (c/o Wade Dittrich for OXY USA INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2224356841, for the following reasons:

- **Closure Report Denied. Release occurred off pad. All off pad areas must contain a minimum of 4 feet non-waste containing uncontaminated, earthen material with chloride concentrations less than 600 mg/kg and less than 100 mg/kg for TPH. Please address this release according to 19.15.29 NMAC. Please resubmit a revised closure report to the OCD portal by March 13, 2023.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 179033.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,  
Jennifer Nobui  
Environmental Specialist-Advanced  
505-470-3407  
[Jennifer.Nobui@emnrd.nm.gov](mailto:Jennifer.Nobui@emnrd.nm.gov)

**New Mexico Energy, Minerals and Natural Resources Department**  
1220 South St. Francis Drive  
Santa Fe, NM 87505

## SOIL BORING / WELL LOG

## Soil Boring / Well Number: SB-1 (C-04687-POD1)

Project #: 03B1417061

Drawn By: Kelly Lowery

Approved By: Beaux Jennings

Sampler: Shane Diller

Logged By: Shane Diller

Screen: N/A

Total Depth: 112.53'

## GROUNDWATER DEPTH

▼ AT COMPLETION

AT WELL STABILIZATION

ST - PRESSED SHELBY TUBE

[illegible]

NR - No Recovery



Client: Oxy USA Inc.  
 Project Name: Sundance SDS 11-1 SWD  
 Project Location: Eddy County, New Mexico  
 Project Manager: Beaux Jennings

## SOIL BORING / WELL LOG

### DRILLING & SAMPLING INFORMATION

Date Started: 11/29/2022  
 Date Completed: 11/29/2022  
 Drilling Company: West Texas Water Well Services  
 Driller: Russell Southerland  
 Geologist: Shane Diller  
 Boring Method: AR  
 Sampler Type: AR  
 Bore Hole Diameter: 5 7/8"  
 Casing Diameter: N/A  
 Well Materials: N/A  
 Surface Completion: N/A

Soil Boring / Well Number: SB-1 (C-04687-POD1)  
 Project #: 03B1417061  
 Drawn By: Kelly Lowery  
 Approved By: Beaux Jennings

**BORING METHOD**  
 HSA - HOLLOW STEM AUGERS  
 CFA - CONTINUOUS FLIGHT AUGERS  
 GP - GEOPROBE  
 AR - AIR ROTARY

**SAMPLER TYPE**  
 CB - FIVE FOOT CORE BARREL  
 SS - DRIVEN SPLIT SPOON  
 ST - PRESSED SHELBY TUBE

**GROUNDWATER DEPTH**  
 ▽ AT COMPLETION  
 ▽ AT WELL STABILIZATION

### BORING AND SAMPLING NOTES

Soil Boring Detail	SOIL CLASSIFICATION	Stratum Depth	Depth Scale	Sample No.	Sample Interval	% Recovery	Groundwater Depth	FID/PID Readings (ppm)

Drill Cuttings-

Drill Cuttings-

75' - Sandstone, dry, no odor

Sand with limestone, red, dry, no odor

112.53' - Total Depth

NR - No Recovery



Mike A. Hamman, P.E.  
State Engineer



Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

**STATE OF NEW MEXICO**  
**OFFICE OF THE STATE ENGINEER**

Trn Nbr: 739086  
File Nbr: C 04687

Dec. 19, 2022

BEAUX JENNINGS  
ENSOLUM LLC  
601 N MARIENFELD ST SUITE 400  
MIDLAND, TX 79701

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

- \* If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.
- \* If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.
- \* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.
- \* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us).

Sincerely,

  
Vanessa Clements  
(575) 622-6521

Enclosure

explore

Mike A. Hamman, P.E.  
State Engineer



Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

**STATE OF NEW MEXICO**  
**OFFICE OF THE STATE ENGINEER**

Trn Nbr: 739086  
File Nbr: C 04687

Dec. 19, 2022

WADE DITTRICH  
OXY USA INC  
PO BOX 4294  
HOUSTON, TX 77210

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- \* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.
- \* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us).

Sincerely,

*Vanessa Clements*

Vanessa Clements  
(575) 622-6521

Enclosure

explore



File No.

C-4687



## NEW MEXICO OFFICE OF THE STATE ENGINEER

## WR-07 APPLICATION FOR PERMIT TO DRILL

## A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: <http://www.ose.state.nm.us/>

Purpose:	<input type="checkbox"/> Pollution Control And/Or Recovery	<input type="checkbox"/> Ground Source Heat Pump
<input type="checkbox"/> Exploratory Well (Pump test)	<input type="checkbox"/> Construction Site/Public Works Dewatering	<input checked="" type="checkbox"/> Other(Describe): Investigation Soil Boring
<input type="checkbox"/> Monitoring Well	<input type="checkbox"/> Mine Dewatering	

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

☐ Temporary Request - Requested Start Date: 10/19/22 Requested End Date: 11/19/22

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

## 1. APPLICANT(S)

Name: Oxy USA Inc.	Name: Ensolum, LLC
Contact or Agent: check here if Agent <input checked="" type="checkbox"/>	Contact or Agent: check here if Agent <input type="checkbox"/>
Mr. Wade Dittrich	Mr. Beaux Jennings
Mailing Address: PO Box 4294	Mailing Address: 601 N. Marienfeld Street, Ste 400
City: Houston	City: Midland
State: TX Zip Code: 77210	State: TX Zip Code: 79701
Phone: 575-390-2828 <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell	Phone: 210-219-8858 <input type="checkbox"/> Home <input checked="" type="checkbox"/> Cell
Phone (Work):	Phone (Work):
E-mail (optional): wade_dittrich@oxy.com	E-mail (optional): bjennings@ensolum.com

OCD OCT NOV 22 2022 PM 10:42

FOR OSE INTERNAL USE

Application for Permit, Form WR-07, Rev 11/17/16

File No.: C-4687	Trm. No.: 739086	Receipt No.: 2-45241
Trans Description (optional): MON		
Sub-Basin: CUB	PCW/LOG Due Date: 12-15-2023	

Page 1 of 3

**2. WELL(S)** Describe the well(s) applicable to this application.

<b>Location Required:</b> Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), <u>or</u> Latitude/Longitude (Lat/Long - WGS84). District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.			
<input type="checkbox"/> NM State Plane (NAD83) (Feet) <input type="checkbox"/> UTM (NAD83) (Meters) <input checked="" type="checkbox"/> Lat/Long (WGS84) (to the nearest 1/10 <sup>th</sup> of second)			
<input type="checkbox"/> NM West Zone <input type="checkbox"/> Zone 12N <input type="checkbox"/> NM East Zone <input type="checkbox"/> Zone 13N <input type="checkbox"/> NM Central Zone			
Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (Quarters or Halves, Section, Township, Range) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
Pod 1 <del>SB</del>	-103.731944	32.228333	NE 1/4 of SW 1/4 of S12, T24S, R31E
NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions) <b>Additional well descriptions are attached:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No      If yes, how many _____			
Other description relating well to common landmarks, streets, or other: Soil boring will be installed on pipeline ROW next to spill area.			
Well is on land owned by: BLM			
<b>Well Information:</b> NOTE: If more than one (1) well needs to be described, provide attachment. Attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, how many _____			
Approximate depth of well (feet): 110		Outside diameter of well casing (inches): 6	
Driller Name: West Texas Water Well Service - Ronny Keith		Driller License Number: WD-1184	

**3. ADDITIONAL STATEMENTS OR EXPLANATIONS**

The investigation soil boring will be installed to a depth of approximately 110' below ground surface. The soil boring will be left open for approximately 72 hours, gauged with a water level meter to check for potential groundwater, then plugged in accordance with the associated Well Plugging Plan of Operations.

USE ONLY NOV 22 2022 10:42

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: C-4687	Trn No.: 739086
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Page 2 of 3



**4. SPECIFIC REQUIREMENTS:** The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

<b>Exploratory:</b> <input checked="" type="checkbox"/> Include a description of any proposed pump test, if applicable.	<b>Pollution Control and/or Recovery:</b> <input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following: <input type="checkbox"/> A description of the need for the pollution control or recovery operation. <input type="checkbox"/> The estimated maximum period of time for completion of the operation. <input type="checkbox"/> The annual diversion amount. <input type="checkbox"/> The annual consumptive use amount. <input type="checkbox"/> The maximum amount of water to be diverted and injected for the duration of the operation. <input type="checkbox"/> The method and place of discharge.	<b>Construction De-Watering:</b> <input type="checkbox"/> Include a description of the proposed dewatering operation, <input type="checkbox"/> The estimated duration of the operation, <input type="checkbox"/> The maximum amount of water to be diverted, <input type="checkbox"/> A description of the need for the dewatering operation, and, <input type="checkbox"/> A description of how the diverted water will be disposed of.	<b>Mine De-Watering:</b> <input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following: <input type="checkbox"/> A description of the need for mine dewatering. <input type="checkbox"/> The estimated maximum period of time for completion of the operation. <input type="checkbox"/> The source(s) of the water to be diverted. <input type="checkbox"/> The geohydrologic characteristics of the aquifer(s). <input type="checkbox"/> The maximum amount of water to be diverted per annum. <input type="checkbox"/> The maximum amount of water to be diverted for the duration of the operation. <input type="checkbox"/> The quality of the water. <input type="checkbox"/> The method of measurement of water diverted. <input type="checkbox"/> The recharge of water to the aquifer. <input type="checkbox"/> Description of the estimated area of hydrologic effect of the project. <input type="checkbox"/> The method and place of discharge. <input type="checkbox"/> An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. <input type="checkbox"/> A description of the methods employed to estimate effects on surface water rights and underground water rights. <input type="checkbox"/> Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
<b>Monitoring:</b> <input type="checkbox"/> Include the reason for the monitoring well, and, <input type="checkbox"/> The duration of the planned monitoring.	<input type="checkbox"/> The method of measurement of water produced and discharged. <input type="checkbox"/> The source of water to be injected. <input type="checkbox"/> The method of measurement of water injected. <input type="checkbox"/> The characteristics of the aquifer. <input type="checkbox"/> The method of determining the resulting annual consumptive use of water and depletion from any related stream system. <input type="checkbox"/> Proof of any permit required from the New Mexico Environment Department. <input type="checkbox"/> An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	<b>Ground Source Heat Pump:</b> <input type="checkbox"/> Include a description of the geothermal heat exchange project, <input type="checkbox"/> The number of boreholes for the completed project and required depths. <input type="checkbox"/> The time frame for constructing the geothermal heat exchange project, and, <input type="checkbox"/> The duration of the project. <input type="checkbox"/> Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

#### ACKNOWLEDGEMENT

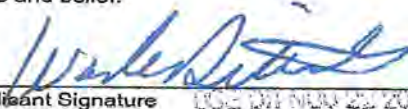
I, We (name of applicant(s)), Beaux Jennings, Wade Dittrich

Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

**Beaux Jennings** Digitally signed by Beaux Jennings  
Date: 2022.10.19 11:16:29 -05'00'

Applicant Signature

  
Applicant Signature

#### ACTION OF THE STATE ENGINEER

This application is:

☒ approved

☐ partially approved

☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 15<sup>th</sup> day of December 20 22, for the State Engineer,

Mike A. Hamman P.E., State Engineer

By: K. Parekh  
Signature

Kashyap Parekh  
Print

Title: Water Resources Manager I  
Print

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: C-4687

Trn No.: 739086

Page 3 of 3

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL**

- 17-16 Construction of a water well by anyone without a valid New Mexico Well Driller License is illegal, and the landowner shall bear the cost of plugging the well by a licensed New Mexico well driller. This does not apply to driven wells, the casing of which does not exceed two and three-eighths inches outside diameter.
- 17-1A Depth of the well shall not exceed the thickness of the valley fill.
- 17-4 No water shall be appropriated and beneficially used under this permit.
- 17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.

Trn Desc: C 04687 POD1

File Number: C 04687

Trn Number: 739086

page: 1



**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

- 17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.
- 17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.
- 17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.  
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.
- 17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.
- 17-Q The State Engineer retains jurisdiction over this permit.
- 17-R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

Trn Desc: C 04687 POD1

File Number: C 04687

Trn Number: 739086

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

LOG      The Point of Diversion C 04687 POD1 must be completed and the Well Log filed on or before 12/15/2023.

IT IS THE PERMITEE'S RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACITIVITIES UNDER THIS PERMIT.

**ACTION OF STATE ENGINEER**

Notice of Intention Rcvd:	Date Rcvd. Corrected:
Formal Application Rcvd: 11/22/2022	Pub. of Notice Ordered:
Date Returned - Correction:	Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 15 day of Dec A.D., 2022

Mike A. Hamman, P.E., State Engineer

By: K. Parekh  
KASHYAP PAREKH

Trn Desc: C 04687 POD1

File Number: C 04687  
Trn Number: 739086

page: 3



## OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – ROSWELL OFFICE

OFFICIAL RECEIPT NUMBER: 2 - 45241 DATE: 11/22/22 FILE NO.:

TOTAL: 5.00 RECEIVED: Five DOLLARS CHECK NO.: 1224 CASH:

PAYOR: Kalei M. Jennings and Beauv D. Jennings ADDRESS: 6015 County Road 1065 CITY: Midland STATE: TX

ZIP: 79706 RECEIVED BY: R.C.

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; and **yellow** copy for Water Rights. If a mistake is made, void the original and all copies and submit to Program Support/ASD as part of your daily deposit.**A. Ground Water Filing Fees**

1. Change of Ownership of Water Right	\$ 2.00
2. Application to Appropriate or Supplement Domestic 72-12-1 Well	\$ 125.00
3. Application to Repair or Deepen 72-12-1 Well	\$ 75.00
4. Application for Replacement 72-12-1 Well	\$ 75.00
5. Application to Change Purpose of Use 72-12-1 Well	\$ 75.00
6. Application for Stock Well/Temp. Use	\$ 5.00

7. Application to Appropriate Irrigation, Municipal, or Commercial Use	\$ 25.00
8. Declaration of Water Right	\$ 1.00
9. Application for Additional Point of Diversion Non 72-12-1 Per Well	\$ 25.00
10. Application to Change Place or Purpose of Use Non 72-12-1 Well	\$ 25.00
11. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water	\$ 50.00
12. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Ground Water	\$ 50.00
13. Application to Change Point of Diversion of Non 72-12-1 Well	\$ 25.00
14. Application to Repair or Deepen Non 72-12-1 Well	\$ 5.00

15. Application for Test, Expl. Observ. Well	\$ 5.00
16. Application for Extension of Time	\$ 25.00
17. Proof of Application to Beneficial Use	\$ 25.00
18. Notice of Intent to Appropriate	\$ 25.00

**B. Surface Water Filing Fees**

1. Change of Ownership of a Water Right	\$ 5.00
2. Declaration of Water Right	\$ 10.00
3. Amended Declaration	\$ 25.00
4. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Surface Water	\$ 200.00
5. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Surface Water	\$ 200.00
6. Application to Change Point of Diversion	\$ 100.00
7. Application to Change Place and/or Purpose of Use	\$ 100.00
8. Application to Appropriate	\$ 25.00
9. Notice of Intent to Appropriate	\$ 25.00
10. Application for Extension of Time	\$ 50.00
11. Supplemental Well to a Surface Right	\$ 100.00
12. Return Flow Credit	\$ 100.00
13. Proof of Completion of Works	\$ 25.00
14. Proof of Application of Water to Beneficial Use	\$ 25.00
15. Water Development Plan	\$ 100.00
16. Declaration of Livestock Water Impoundment	\$ 10.00
17. Application for Livestock Water Impoundment	\$ 10.00

**C. Well Driller Fees**

1. Application for Well Driller's License	\$ 50.00
2. Application for Renewal of Well Driller's License	\$ 50.00
3. Application to Amend Well Driller's License	\$ 50.00

**D. Reproduction of Documents**

@ 0.25¢	\$
Map(s) @ \$3.00	\$

**E. Certification****F. Other****G. Comments:**

FedEx

**All fees are non-refundable.**



**STATE OF NEW MEXICO**  
**OFFICE OF THE STATE ENGINEER**  
**ROSWELL**

**Mike A. Hamman, P.E.**  
State Engineer

**DISTRICT II**  
1900 West Second St.  
Roswell, New Mexico 88201  
Phone: (575) 622-6521  
Fax: (575) 623-8559

November 23, 2022

Oxy USA Inc.  
P.O. Box 4294  
Houston, TX 77210

RE: Well Plugging Plan of Operations for well no. C-4687-POD1

Greetings:

Enclosed is your copy of the Well Plugging Plan of Operations for the above referenced well subject to the attached Conditions of Approval. The proposed method of operation is found to be acceptable and in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted June 30, 2017 by the State Engineer. subject to the attached Conditions of Approval.

Well Plugging Plan of Operations form (WD-08) has been updated. Current form can be found on the OSE website at the following link <https://www.ose.state.nm.us/Statewide/wdForms.php>.

Within 30 days after the well is plugged, the well driller is required to file a complete plugging record with the OSE and the permit holder.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Parekh".

Kashyap Parekh  
Water Resources Manager I





**STATE OF NEW MEXICO**  
**OFFICE OF THE STATE ENGINEER**  
**ROSWELL**

1900 West Second St.  
 Roswell, New Mexico 88201  
 Phone: (575) 622-6521  
 Fax: (575) 623- 8559

Applicant has identified well, listed below, to be plugged. West Texas Water Well Service (WD-1184) will perform the plugging.

Permittee: Oxy USA Inc.  
 NMOSE Permit Number: C-4687-POD1

NMOSE File	Casing diameter (inches)	Well depth (feet bgl)	Approximate static water level (feet bgl)	Latitude	Longitude
C-4687-POD1	Soil Boring	110.0	Unknown	32° 13' 41.9982"	103° 43' 54.9978"

**Specific Plugging Conditions of Approval for Well located in Eddy County.**

1. Water well drilling and well drilling activities, including well plugging, are regulated under 19.27.4 NMAC, which requires any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the New Mexico Office of the State Engineer (NMOSE). Therefore, the firm of a New Mexico licensed Well Driller shall perform the well plugging.
2. The total Theoretical volume of sealant required for abandonment is approximately 100 gallons. Total minimum volume of necessary sealant shall be calculated upon sounding the actual pluggable depth of well, which is estimated at 110 feet.
3. A Type I/II Portland cement mixed with 5.2 to 6.0 gallons of fresh water per 94-lb sack of cement is approved for the plugging the well.
4. Sealant shall be placed by pumping through a tremie pipe extended to near well bottom and kept below top of the slurry column as the well is plugged from bottom-upwards in a manner that displaces the standing water column upwards from below. Tremie pipe may be pulled as necessary to retain minimal submergence in the advancing column of sealant.
5. Should cement "shrinks-back" occur in the well, use of a tremie for topping off is required for cement placement deeper than 20 feet below land surface or if water is present in the casing. The approved sealant for topping off is identified in condition 3. of these Specific Conditions of Approval.

6. Any open annulus encountered surrounding the casing shall also be sealed by the placement of the approved sealant. When plugging shallow wells with no construction or environmental concerns, and if the well record on a well to be plugged shows a proper 20-foot annular seal, a plugging plan can propose the use of clean fill material to a nominal 30 feet bgs, then placing an OSE approved sealant to surface. Lacking that information, we would require an excavation of at least 2-feet which shall then be filled in its entirety with sealant to surface.
7. Should the NMED, or another regulatory agency sharing jurisdiction of the project authorize, or by regulation require a more stringent well plugging procedure than herein acknowledged, the more-stringent procedure should be followed. This, in part, includes provisions regarding pre-authorization to proceed, contaminant remediation, inspection, pulling/perforating of casing, or prohibition of free discharge of any fluid from the borehole during or related to the plugging process.
8. NMOSE witnessing of the plugging of the shallow well will not be required.
9. Any deviation from this plan must obtain an approved variance from this office prior to implementation.
10. A Well Plugging Record itemizing actual abandonment process and materials used shall be filed with the State Engineer within 30 days after completion of well plugging. For the plugging record, please resurvey coordinate location for well and note coordinate system for GPS unit. Please attach a copy of these plugging conditions.

The NMOSE Well Plugging Plan of Operations is hereby approved with the aforesaid conditions applied.

Witness my hand and seal this 23<sup>rd</sup> day of November 2022

Mike A. Hamman, P.E. State Engineer



By: \_\_\_\_\_

*K. Parekh*

Kashyap Parekh  
Water Resources Manager I





## WELL PLUGGING PLAN OF OPERATIONS



**NOTE:** A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology [geoinfo.nmt.edu/resources/water/cgmn/](http://geoinfo.nmt.edu/resources/water/cgmn/) if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email [nmbg-waterlevels@nmt.edu](mailto:nmbg-waterlevels@nmt.edu), prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

**I. FILING FEE:** There is no filing fee for this form.

**II. GENERAL / WELL OWNERSHIP:** ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: POD1 (SB-1) (-4687-POD1)

Name of well owner: Oxy USA Inc.

Mailing address: PO Box 4294 County: Harris

City: Houston State: TX Zip code: 77210

Phone number: 575-390-2828 E-mail: wade\_dittrich@oxy.com

### III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: West Texas Water Well Service

New Mexico Well Driller License No.: WD-1184 Expiration Date: October 31, 2023

**IV. WELL INFORMATION:** ☐ Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 13 min, 41.9982 sec  
Longitude: -103 deg, 43 min, 54.9978 sec, NAD 83

2) Reason(s) for plugging well(s):

Investigation soil boring to determine groundwater level.

3) Was well used for any type of monitoring program? N/A If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? N/A If yes, provide additional detail, including analytical results and/or laboratory report(s):

5) Static water level: unknown feet below land surface / feet above land surface (circle one)

6) Depth of the well: 110 feet

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- 7) Inside diameter of innermost casing: N/A inches.
- 8) Casing material: N/A
- 9) The well was constructed with:  
☐ an open-hole production interval, state the open interval: \_\_\_\_\_  
☐ a well screen or perforated pipe, state the screened interval(s): \_\_\_\_\_
- 10) What annular interval surrounding the artesian casing of this well is cement-grouted? N/A
- 11) Was the well built with surface casing? No If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? N/A If yes, please describe:
- 12) Has all pumping equipment and associated piping been removed from the well? N/A If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

**V. DESCRIPTION OF PLANNED WELL PLUGGING:** ☐ If plugging method differs between multiple wells on same site, a separate form must be completed for each method.

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

The soil boring will be plugged tremie from bottom to a slurry of Portland TYPE I/II Neat cement in lifts

- 2) Will well head be cut-off below land surface after plugging? N/A

**VI. PLUGGING AND SEALING MATERIALS:**

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

- 1) For plugging intervals that employ cement grout, complete and attach Table A.
- 2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
- 3) Theoretical volume of grout required to plug the well to land surface: 100
- 4) Type of Cement proposed: Type I/II Neat Cement
- 5) Proposed cement grout mix: <6.0 gallons of water per 94 pound sack of Portland cement.
- 6) Will the grout be: \_\_\_\_\_ batch-mixed and delivered to the site  
X mixed on site

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- 7) Grout additives requested, and percent by dry weight relative to cement:

N/A

- 8) Additional notes and calculations:

N/A

**VII. ADDITIONAL INFORMATION:** List additional information below, or on separate sheet(s):

Volumes calculated on an up to an approximate 6" boring.

**VIII. SIGNATURE:**

I, Wade Dittrich, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.



Signature of Applicant

10/19/2022

Date

**IX. ACTION OF THE STATE ENGINEER:**

This Well Plugging Plan of Operations is:

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- ☒ Approved subject to the attached conditions.  
☐ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 23<sup>rd</sup> day of November, 2022

Mike A. Kamma

John B. D'Antonio Jr. P.E., New Mexico State Engineer

By:

K. Parekh  
KASHYAP PAREKH  
W.R.M. I



**TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.**

	<b>Interval 1 – deepest</b>	<b>Interval 2</b>	<b>Interval 3 – most shallow</b>
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)	N/A	N/A	0
Bottom of proposed interval of grout placement (ft bgl)	N/A	N/A	100
Theoretical volume of grout required per interval (gallons)	N/A	N/A	50
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement	N/A	N/A	<6.0
Mixed on-site or batch-mixed and delivered?	N/A	N/A	On-site
Grout additive 1 requested	N/A	N/A	N/A
Additive 1 percent by dry weight relative to cement	N/A	N/A	N/A
Grout additive 2 requested	N/A	N/A	N/A
Additive 2 percent by dry weight relative to cement	N/A	N/A	N/A

OSE DTI NOV 22 2022 PM 10:42

**TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.**

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)	N/A	N/A	0
Bottom of proposed sealant of grout placement (ft bgl)	N/A	N/A	10
Theoretical volume of sealant required per interval (gallons)	N/A	N/A	52
Proposed abandonment sealant (manufacturer and trade name)	N/A	N/A	Bariod Hole Plug

QSE DTT NOV 22 2022 AM 10:42



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	nAPP2224356841
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 # nAPP2224356841
Contact mailing address: PO Box 4294, Houston, TX 77210	

Location of Release Source

Latitude 32.228333 Longitude -103.731944  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Sundance-SDS 11-1 SWD	Site Type: Oil/Produced Water Gathering Line
Date Release Discovered: 8/30/2022	API# (if applicable)

Unit Letter	Section	Township	Range	County
K	11	24S	31E	Eddy

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): 50	Volume Recovered (bbls): 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" 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: 4-inch poly line failure.




State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2224356841
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 <a href="mailto:OCD.enviro@state.nm.us">OCD.enviro@state.nm.us</a> and <a href="mailto:BLM_NM_CFO_Spill@blm.gov">BLM_NM_CFO_Spill@blm.gov</a> on 8/31/2022 at 1235.	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: <u>Tyson Pierce</u>	Title: <u>Environmental Specialist</u>
Signature: 	Date: <u>9-8-22</u>
email: <u>Tyson_Pierce@oxy.com</u>	Telephone: <u>575-390-3610</u>
<b>OCD Only</b>	
Received by: _____	Date: _____

**Beaux Jennings**

---

**From:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>  
**Sent:** Wednesday, December 21, 2022 5:31 PM  
**To:** Beaux Jennings  
**Cc:** Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD  
**Subject:** RE: [EXTERNAL] Sundance SDS 11-1 SWD (Incident # nAPP2224356841)

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

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.

**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](mailto:Jocelyn.Harimon@emnrd.nm.gov)  
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



---

**From:** Beaux Jennings <bjennings@ensolum.com>  
**Sent:** Wednesday, December 21, 2022 3:49 PM  
**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>  
**Subject:** [EXTERNAL] Sundance SDS 11-1 SWD (Incident # nAPP2224356841)

**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 Sundance SDS 11-1 SWD (Incident # nAPP2224356841) on Wednesday, December 28<sup>th</sup> at 11am. 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

**PLEASE NOTE OUR NEW CORPORATE ADDRESS:**  
Ensolum, LLC

8330 LBJ Freeway, Ste. 830  
Dallas, TX 75243

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

**SUBMIT IN TRIPLICATE - Other instructions on page 2**


1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other		5. Lease Serial No.
2. Name of Operator Oxy USA Inc.		6. If Indian, Allottee or Tribe Name
3a. Address PO Box 4294, Houston, TX 77210	3b. Phone No. (include area code) 575-390-2828	7. If Unit of CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Section 11, Township 24S, Range 31E		8. Well Name and No. Sundance-SDS 11-1 SWD
		9. API Well No.
		10. Field and Pool or Exploratory Area
		11. Country or Parish, State Eddy County, New Mexico

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

Oxy USA Inc. (Oxy) respectfully requests access represented within the file to install 1 soil boring to assist with depth to groundwater determination for Sundance-SDS 11-1 SWD (GPS Coordinates: 32.228333, -103.731944) (Incident Number: nAPP2224356841). The proposed borehole location is on BLM surface. The soil boring will be left open for approximately 72 hours, to allow for the slow infill of groundwater. Following the 72 hour waiting period, at which time Oxy will assess for the presence or absence of groundwater. A water level meter will be utilized to confirm depth to groundwater in the soil boring. A total depth of the soil boring will also be taken utilizing the water level meter. The soil boring will be backfilled following New Mexico Office of the State Engineer plugging procedures.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) Wade Dittrich		Environmental Specialist	
Signature 		Date 10/19/2022	

**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		
Office		

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)



**Beaux Jennings**

---

**From:** Dittrich, John W <Wade\_Dittrich@oxy.com>  
**Sent:** Monday, December 12, 2022 1:44 PM  
**To:** Beaux Jennings  
**Subject:** FW: The Oil Conservation Division (OCD) has approved the application, Application ID: 158071

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

---

**From:** OCDOnline@state.nm.us <OCDOnline@state.nm.us>  
**Sent:** Friday, December 9, 2022 1:10 PM  
**To:** Dittrich, John W <Wade\_Dittrich@oxy.com>  
**Subject:** [EXTERNAL] The Oil Conservation Division (OCD) has approved the application, Application ID: 158071

**WARNING - This message is from an EXTERNAL SENDER - be CAUTIOUS, particularly with links and attachments.**

---

To whom it may concern (c/o Wade Dittrich for OXY USA INC),

The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2224356841, with the following conditions:

- **Remediation Plan Approved with Conditions.** All off pad areas must contain a minimum of 4 feet non-waste containing uncontaminated, earthen material with chloride concentrations less than 600 mg/kg and less than 100 mg/kg for TPH. Samples must be analyzed for the constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards for site assessment/characterization/proven depth to water determination. Sidewall samples should be delineated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Sidewall/Floor samples should represent no more than 400 ft<sup>2</sup>. Please note the lat/long are incorrect in the C141 submittal and needs to be corrected with closure report submission.

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,  
Jennifer Nobui  
Environmental Specialist-Advanced  
505-470-3407  
[Jennifer.Nobui@emnrd.nm.gov](mailto:Jennifer.Nobui@emnrd.nm.gov)

**New Mexico Energy, Minerals and Natural Resources Department**

1220 South St. Francis Drive

Santa Fe, NM 87505



# OSE POD Locations Map



1/19/2023, 3:38:06 PM

- Recently Edited PODs

● Active

● Pending

OSE District Boundary

Water Right Regulations

Closure Area

New Mexico State Trust Lands

Both Estates

SiteBoundaries
- 1:18,056

00.170.350.7 mi

00.280.551.1 km

Esri, HERE, iPC, U.S. Department of Energy Office of Legacy Management, Esri, HERE, Garmin, iPC, Maxar
- Released to Imaging: 1/30/2024 2:32:18 PM
- Web Generated Map  
Map is generated by web users.










## Wetlands Mapper




October 19, 2022

**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.



# National Flood Hazard Layer FIRMette



103°44'14"W 32°13'57"N



## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		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 Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		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.

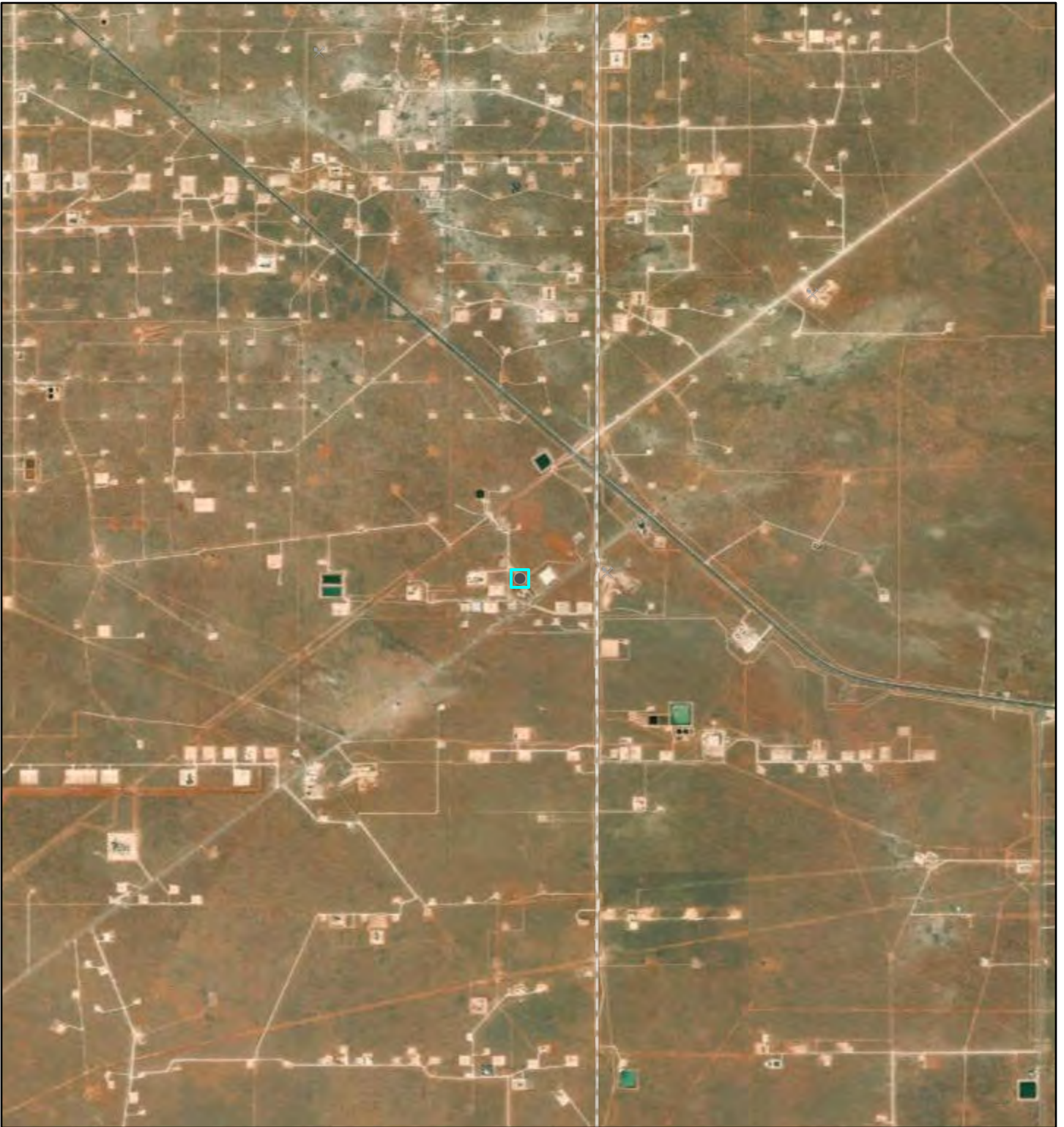
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/19/2022 at 4:26 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.



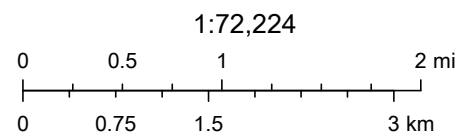
## Active Mines in New Mexico



10/19/2022, 3:23:17 PM

### Registered Mines

- ✕ Aggregate, Stone etc.
- ✕ Aggregate, Stone etc.











Esri, HERE, Garmin, Earthstar Geographics



# Sundance SDS 11-1 SWD

Write a description for your map.

## Legend

-  Feature 1
-  Feature 2
-  Feature 3
-  Feature 4
-  High
-  Low
-  Medium
-  Sundance 11-1 SDS 9.7.22

Sundance SDS 11-1 SWD  32.228333, -103.731944





## APPENDIX C

### Photographic Documentation



Date & Time: Wed, Sep 07, 2022, 11:25:03 MDT  
Position: +032.228441° / -103.731813° ( $\pm 15.6$ ft)  
Altitude: 3555ft ( $\pm 11.1$ ft)  
Datum: WGS-84  
Azimuth/Bearing: 299° N61W 5316mils True ( $\pm 12^\circ$ )  
Elevation Angle:  $-11.4^\circ$   
Horizon Angle:  $-00.7^\circ$   
Zoom: 0.5X



View of release point during initial soil sampling activities, facing northwest.

Date & Time: Wed, Sep 07, 2022, 11:45:07 MDT  
Position: +032.229509° / -103.733175° ( $\pm 15.1$ ft)  
Altitude: 3539ft ( $\pm 11.6$ ft)  
Datum: WGS-84  
Azimuth/Bearing: 119° S61E 2116mils True ( $\pm 10^\circ$ )  
Elevation Angle:  $-04.2^\circ$   
Horizon Angle:  $+00.3^\circ$   
Zoom: 0.5X



View of release area during initial soil sampling activities, facing southeast.



## APPENDIX D

### Tables

**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 Sundance SDS 11-1 SWD  
 Oxy USA Inc.  
 Eddy County, New Mexico  
 Ensolum Project No. 03B1417061


Sample Designation	Sample Date	Sample 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
Composite Soil Sample Analytical Results												
FS-1	9/27/2022	1 - 2	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	33.4	11.0	44.4	64.0
FS-2	9/27/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	19.4	<10.0	19.4	7,760
FS-3	9/27/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	4,640
FS-4	9/27/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	20,000
FS-5	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	352
FS-6	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	15.7	<10.0	15.7	464
FS-7	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	16.0
FS-8	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	800
	9/14/2023	0.25 - 0.50	NS					NS				32.0
FS-9	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	1,380
	9/14/2023	0.25 - 0.50	NS					NS				2,640
	10/11/2023	0.50 - 0.75	NS					NS				<16.0
FS-10	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	2,040
	9/14/2023	0.25 - 0.50	NS					NS				32.0
FS-11	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	2,400
	9/14/2023	0.25 - 0.50	NS					NS				32.0
FS-12	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	4,720
	9/14/2023	0.25 - 0.50	NS					NS				128
FS-13	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	4,200
	9/14/2023	0.25 - 0.50	NS					NS				80.0
FS-14	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	4,560
	9/14/2023	0.25 - 0.50	NS					NS				96.0
FS-15	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	3,360
	9/14/2023	0.25 - 0.50	NS					NS				112



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 Sundance SDS 11-1 SWD  
 Oxy USA Inc.  
 Eddy County, New Mexico  
 Ensolum Project No. 03B1417061

Sample Designation	Sample Date	Sample 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
Composite Soil Sample Analytical Results												
FS-16	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	2,160
	9/14/2023	0.25 - 0.50	NS					NS				64.0
FS-17	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	1,840
	9/14/2023	0.25 - 0.50	NS					NS				80.0
FS-18	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	1,840
	9/14/2023	0.25 - 0.50	NS					NS				16.0
FS-19	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	1,680
	9/14/2023	0.25 - 0.50	NS					NS				32.0
FS-20	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	1,840
	9/14/2023	0.25 - 0.50	NS					NS				16.0
FS-21	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	6,000
	9/14/2023	0.25 - 0.50	NS					NS				<16.0
FS-22	12/28/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	6,560
	9/14/2023	0.25 - 0.50	NS					NS				272
Delineation Sample Analytical Results												
North	9/27/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	128
East	9/27/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	64.0
South	9/27/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32.0
West	9/27/2022	0 - 0.25	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	16.0

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

 Over Excavated and/or Re-Sampled

bgs: below ground surface

mg/kg: milligrams per kilogram

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

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September 30, 2022

BEAUX JENNINGS

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: SUNDANCE SDS 11-1 SWD

Enclosed are the results of analyses for samples received by the laboratory on 09/27/22 13:21.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

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: 09/27/2022  
 Reported: 09/30/2022  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/27/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 1 1-2' (H224480-01)**

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/29/2022	ND	2.08	104	2.00	4.40	
Toluene*	<0.050	0.050	09/29/2022	ND	2.01	100	2.00	2.94	
Ethylbenzene*	<0.050	0.050	09/29/2022	ND	1.89	94.4	2.00	2.74	
Total Xylenes*	<0.150	0.150	09/29/2022	ND	5.84	97.3	6.00	2.29	
Total BTEX	<0.300	0.300	09/29/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

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	09/28/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2022	ND	199	99.7	200	0.554	
DRO >C10-C28*	33.4	10.0	09/28/2022	ND	206	103	200	2.09	
EXT DRO >C28-C36	11.0	10.0	09/28/2022	ND					

Surrogate: 1-Chlorooctane 90.7 % 45.3-161

Surrogate: 1-Chlorooctadecane 97.3 % 46.3-178

Cardinal Laboratories

\*=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: 09/27/2022  
 Reported: 09/30/2022  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/27/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 2 0-.25' (H224480-02)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/29/2022	ND	2.08	104	2.00	4.40		
Toluene*	<0.050	0.050	09/29/2022	ND	2.01	100	2.00	2.94		
Ethylbenzene*	<0.050	0.050	09/29/2022	ND	1.89	94.4	2.00	2.74		
Total Xylenes*	<0.150	0.150	09/29/2022	ND	5.84	97.3	6.00	2.29		
Total BTEX	<0.300	0.300	09/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7760	16.0	09/28/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2022	ND	199	99.7	200	0.554	
DRO >C10-C28*	19.4	10.0	09/28/2022	ND	206	103	200	2.09	
EXT DRO >C28-C36	<10.0	10.0	09/28/2022	ND					

Surrogate: 1-Chlorooctane 84.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 91.2 % 46.3-178

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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: 09/27/2022  
 Reported: 09/30/2022  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/27/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 3 0-.25' (H224480-03)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/29/2022	ND	2.08	104	2.00	4.40		
Toluene*	<0.050	0.050	09/29/2022	ND	2.01	100	2.00	2.94		
Ethylbenzene*	<0.050	0.050	09/29/2022	ND	1.89	94.4	2.00	2.74		
Total Xylenes*	<0.150	0.150	09/29/2022	ND	5.84	97.3	6.00	2.29		
Total BTEX	<0.300	0.300	09/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4640	16.0	09/28/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2022	ND	199	99.7	200	0.554	
DRO >C10-C28*	<10.0	10.0	09/28/2022	ND	206	103	200	2.09	
EXT DRO >C28-C36	<10.0	10.0	09/28/2022	ND					

Surrogate: 1-Chlorooctane 82.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 88.1 % 46.3-178

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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: 09/27/2022  
 Reported: 09/30/2022  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/27/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 4 0-.25' (H224480-04)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/29/2022	ND	2.08	104	2.00	4.40	
Toluene*	<0.050	0.050	09/29/2022	ND	2.01	100	2.00	2.94	
Ethylbenzene*	<0.050	0.050	09/29/2022	ND	1.89	94.4	2.00	2.74	
Total Xylenes*	<0.150	0.150	09/29/2022	ND	5.84	97.3	6.00	2.29	
Total BTEX	<0.300	0.300	09/29/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	20000	16.0	09/28/2022	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2022	ND	199	99.7	200	0.554	
DRO >C10-C28*	<10.0	10.0	09/28/2022	ND	206	103	200	2.09	
EXT DRO >C28-C36	<10.0	10.0	09/28/2022	ND					

Surrogate: 1-Chlorooctane 86.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 91.6 % 46.3-178

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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: 09/27/2022  
Reported: 09/30/2022  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 09/27/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: NORTH 0-.25' (H224480-05)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/29/2022	ND	2.08	104	2.00	4.40		
Toluene*	<0.050	0.050	09/29/2022	ND	2.01	100	2.00	2.94		
Ethylbenzene*	<0.050	0.050	09/29/2022	ND	1.89	94.4	2.00	2.74		
Total Xylenes*	<0.150	0.150	09/29/2022	ND	5.84	97.3	6.00	2.29		
Total BTEx	<0.300	0.300	09/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	09/28/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2022	ND	199	99.7	200	0.554	
DRO >C10-C28*	<10.0	10.0	09/28/2022	ND	206	103	200	2.09	
EXT DRO >C28-C36	<10.0	10.0	09/28/2022	ND					

Surrogate: 1-Chlorooctane 88.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 93.9 % 46.3-178

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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: 09/27/2022  
 Reported: 09/30/2022  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/27/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: EAST 0-.25' (H224480-06)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/29/2022	ND	2.08	104	2.00	4.40	
Toluene*	<0.050	0.050	09/29/2022	ND	2.01	100	2.00	2.94	
Ethylbenzene*	<0.050	0.050	09/29/2022	ND	1.89	94.4	2.00	2.74	
Total Xylenes*	<0.150	0.150	09/29/2022	ND	5.84	97.3	6.00	2.29	
Total BTX	<0.300	0.300	09/29/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.9-140

Chloride, SM4500CI-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	09/28/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2022	ND	199	99.7	200	0.554	
DRO >C10-C28*	<10.0	10.0	09/28/2022	ND	206	103	200	2.09	
EXT DRO >C28-C36	<10.0	10.0	09/28/2022	ND					

Surrogate: 1-Chlorooctane 83.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 88.2 % 46.3-178

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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: 09/27/2022  
 Reported: 09/30/2022  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/27/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: WEST 0-.25' (H224480-07)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/29/2022	ND	2.08	104	2.00	4.40		
Toluene*	<0.050	0.050	09/29/2022	ND	2.01	100	2.00	2.94		
Ethylbenzene*	<0.050	0.050	09/29/2022	ND	1.89	94.4	2.00	2.74		
Total Xylenes*	<0.150	0.150	09/29/2022	ND	5.84	97.3	6.00	2.29		
Total BTEx	<0.300	0.300	09/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/28/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2022	ND	199	99.7	200	0.554	
DRO >C10-C28*	<10.0	10.0	09/28/2022	ND	206	103	200	2.09	
EXT DRO >C28-C36	<10.0	10.0	09/28/2022	ND					

Surrogate: 1-Chlorooctane 82.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 86.6 % 46.3-178

Cardinal Laboratories

\*=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: 09/27/2022  
 Reported: 09/30/2022  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/27/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SOUTH 0-.25' (H224480-08)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/29/2022	ND	2.08	104	2.00	4.40		
Toluene*	<0.050	0.050	09/29/2022	ND	2.01	100	2.00	2.94		
Ethylbenzene*	<0.050	0.050	09/29/2022	ND	1.89	94.4	2.00	2.74		
Total Xylenes*	<0.150	0.150	09/29/2022	ND	5.84	97.3	6.00	2.29		
Total BTEx	<0.300	0.300	09/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/28/2022	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/28/2022	ND	199	99.7	200	0.554	
DRO >C10-C28*	<10.0	10.0	09/28/2022	ND	206	103	200	2.09	
EXT DRO >C28-C36	<10.0	10.0	09/28/2022	ND					

Surrogate: 1-Chlorooctane 85.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 88.6 % 46.3-178

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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---

### Notes and Definitions

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

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

---

Celey D. Keene, Lab Director/Quality Manager





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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC

Project Manager: Beau Jennings

Address: 601 N. Marland St. STE 400

City: Midland

State: TX Zip: 79701

Phone #: 432 230 3344 Fax #:

Project #: 03B1417061

Project Owner: Oxy

Project Name: Sundance SDS11-1 SWD

Project Location: Eddy Co NM

Sample Name: Stone D. 11-1

## BILL TO

P.O. #:

Company: Oxy USA, Inc.

Attn: Wade Dittich

Address:

City:

State: Zip:

Phone #: 575-390-2828

Fax #:

## ANALYSIS REQUEST

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

Sample Depth (feet)

(G)RAB OR (C)OMP.

# CONTAINERS

MATRIX

PRESERV.

SAMPLING

1-5-1

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

January 03, 2023

BEAUX JENNINGS

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: SUNDANCE SDS 11-1 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/28/22 15:26.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 5 0-.25' (H226089-01)**

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	12/29/2022	ND	2.15	108	2.00	5.91	
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30	
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17	
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47	
Total BTEX	<0.300	0.300	12/29/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 80.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 88.7 % 46.3-178

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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: 12/28/2022  
Reported: 01/03/2023  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 6 0-.25' (H226089-02)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/29/2022	ND	2.15	108	2.00	5.91	
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30	
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17	
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47	
Total BTX	<0.300	0.300	12/29/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	464	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	15.7	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 88.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 97.4 % 46.3-178

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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: 12/28/2022  
Reported: 01/03/2023  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 7 0-.25' (H226089-03)**

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	12/29/2022	ND	2.15	108	2.00	5.91		
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47		
Total BTEx	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

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	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 90.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 98.4 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 8 0-.25' (H226089-04)**

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	12/29/2022	ND	2.15	108	2.00	5.91	
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30	
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17	
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47	
Total BTEX	<0.300	0.300	12/29/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	800	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 87.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 94.3 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 9 0-.25' (H226089-05)**

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	12/29/2022	ND	2.15	108	2.00	5.91	
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30	
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17	
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47	
Total BTEX	<0.300	0.300	12/29/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1380	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 104 % 45.3-161

Surrogate: 1-Chlorooctadecane 111 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 10 0-.25' (H226089-06)**

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	12/29/2022	ND	2.15	108	2.00	5.91		
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47		
Total BTEx	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2040	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 82.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 87.4 % 46.3-178

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**Analytical Results For:**

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

Received: 12/28/2022  
Reported: 01/03/2023  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 11 0-.25' (H226089-07)**

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	12/29/2022	ND	2.15	108	2.00	5.91		
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47		
Total BTEx	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2400	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 82.8 % 45.3-161

Surrogate: 1-Chlorooctadecane 90.3 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 12 0-.25' (H226089-08)**

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	12/29/2022	ND	2.15	108	2.00	5.91		
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47		
Total BTEx	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4720	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 85.1 % 45.3-161

Surrogate: 1-Chlorooctadecane 92.0 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 13 0-.25' (H226089-09)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/29/2022	ND	2.15	108	2.00	5.91	
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30	
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17	
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47	
Total BTX	<0.300	0.300	12/29/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4200	16.0	12/29/2022	ND	432	108	400	3.77	

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 82.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 90.7 % 46.3-178

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**Analytical Results For:**

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

Received: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 14 0-.25' (H226089-10)**

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	12/29/2022	ND	2.15	108	2.00	5.91		
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47		
Total BTEX	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4560	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	212	106	200	1.55	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	190	94.8	200	2.72	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 81.7 % 45.3-161

Surrogate: 1-Chlorooctadecane 90.3 % 46.3-178

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**Analytical Results For:**

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

Received: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 15 0-.25' (H226089-11)**

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	12/29/2022	ND	2.15	108	2.00	5.91		
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47		
Total BTEx	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3360	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	202	101	200	1.95	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	220	110	200	4.99	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 65.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 70.9 % 46.3-178

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**Analytical Results For:**

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

Received: 12/28/2022  
Reported: 01/03/2023  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 16 0-.25' (H226089-12)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/29/2022	ND	2.15	108	2.00	5.91		
Toluene*	<0.050	0.050	12/29/2022	ND	2.15	107	2.00	7.30		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.13	106	2.00	8.17		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.39	107	6.00	8.47		
Total BTEX	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2160	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	202	101	200	1.95	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	220	110	200	4.99	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 63.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 67.7 % 46.3-178

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**Analytical Results For:**

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

Received: 12/28/2022  
Reported: 01/03/2023  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 17 0-.25' (H226089-13)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/29/2022	ND	2.09	105	2.00	11.6		
Toluene*	<0.050	0.050	12/29/2022	ND	2.12	106	2.00	10.8		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.08	104	2.00	11.7		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.28	105	6.00	10.8		
Total BTEx	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1840	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	202	101	200	1.95	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	220	110	200	4.99	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 53.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 56.9 % 46.3-178

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**Analytical Results For:**

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

Received: 12/28/2022  
Reported: 01/03/2023  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 18 0-.25' (H226089-14)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/29/2022	ND	2.09	105	2.00	11.6		
Toluene*	<0.050	0.050	12/29/2022	ND	2.12	106	2.00	10.8		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.08	104	2.00	11.7		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.28	105	6.00	10.8		
Total BTEx	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1840	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	202	101	200	1.95	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	220	110	200	4.99	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 66.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 71.9 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 19 0-.25' (H226089-15)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/29/2022	ND	2.09	105	2.00	11.6		
Toluene*	<0.050	0.050	12/29/2022	ND	2.12	106	2.00	10.8		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.08	104	2.00	11.7		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.28	105	6.00	10.8		
Total BTEX	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1680	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	202	101	200	1.95	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	220	110	200	4.99	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 69.8 % 45.3-161

Surrogate: 1-Chlorooctadecane 75.1 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 20 0-.25' (H226089-16)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/29/2022	ND	2.09	105	2.00	11.6		
Toluene*	<0.050	0.050	12/29/2022	ND	2.12	106	2.00	10.8		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.08	104	2.00	11.7		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.28	105	6.00	10.8		
Total BTEX	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1840	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	202	101	200	1.95	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	220	110	200	4.99	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 72.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 79.3 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 21 0-.25' (H226089-17)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/29/2022	ND	2.09	105	2.00	11.6		
Toluene*	<0.050	0.050	12/29/2022	ND	2.12	106	2.00	10.8		
Ethylbenzene*	<0.050	0.050	12/29/2022	ND	2.08	104	2.00	11.7		
Total Xylenes*	<0.150	0.150	12/29/2022	ND	6.28	105	6.00	10.8		
Total BTEx	<0.300	0.300	12/29/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6000	16.0	12/29/2022	ND	432	108	400	3.77		

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	12/29/2022	ND	202	101	200	3.31	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	197	98.7	200	3.88	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 85.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 93.9 % 46.3-178

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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: 12/28/2022  
 Reported: 01/03/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 12/28/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 22 0-.25' (H226089-18)**

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.09	105	2.00	11.6		
Toluene*	<0.050	0.050	12/30/2022	ND	2.12	106	2.00	10.8		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	11.7		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.28	105	6.00	10.8		
Total BTX	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6560	16.0	12/29/2022	ND	416	104	400	3.92	QM-07	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/29/2022	ND	202	101	200	3.31	
DRO >C10-C28*	<10.0	10.0	12/29/2022	ND	197	98.7	200	3.88	
EXT DRO >C28-C36	<10.0	10.0	12/29/2022	ND					

Surrogate: 1-Chlorooctane 81.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 91.8 % 46.3-178

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

Celey D. Keene, Lab Director/Quality Manager



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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Pg. 1052

<b>Company Name:</b> Ensolum, LLC <b>Project Manager:</b> Beaux Jennings <b>Address:</b> 601 N Marland Street, Suite 400 <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79701 <b>Phone #:</b> 210-219-8858 <b>Fax #:</b> <b>Project #:</b> 03R1417061 <b>Project Owner:</b> <b>Project Name:</b> Solvance SDS 11-1 SWD <b>Project Location:</b> Early County <b>Sample Name:</b> Skunk Pile <b>FOR LAB USE ONLY</b>				<b>BILL TO</b> <b>P.O. #:</b> <b>Company:</b> Oxy USA Inc. <b>Attn:</b> Wade Dittrich <b>Address:</b> <b>City:</b> <b>State:</b> <b>Zip:</b> <b>Phone #:</b> 575-390-2828 <b>Fax #:</b>				<b>ANALYSIS REQUEST</b>						
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING	DATE	TIME	TPH	BTEX	Chlorides	UFE	Sum
1	FS-5	0-.25	C	1	X			12/28/22	0945	X	X	X		
2	FS-6	0-.25	C	1	X			12/28/22	0946	X	X	X		
3	FS-7	0-.25	C	1	X			12/28/22	0947	X	X	X		
4	FS-8	0-.25	C	1	X			12/28/22	0948	X	X	X		
5	FS-9	0-.25	C	1	X			12/28/22	0950	X	X	X		
6	FS-10	0-.25	C	1	X			12/28/22	0951	X	X	X		
7	FS-11	0-.25	C	1	X			12/28/22	0952	X	X	X		
8	FS-12	0-.25	C	1	X			12/28/22	0954	X	X	X		
9	FS-13	0-.25	C	1	X			12/28/22	0956	X	X	X		
10	FS-14	0-.25	C	1	X			12/28/22	0959	X	X	X		

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**Relinquished By:** [Signature] **Date:** 12/28/22 **Received By:** [Signature] **Date:** 12/28/22

**Relinquished By:** [Signature] **Date:** 12/28/22 **Received By:** [Signature] **Date:** 12/28/22

**Delivered By:** (Circle One) **Observed Temp. °C:** 55.5 **Sample Condition:** ☒ Intact ☐ Damaged **CHECKED BY:** [Signature] **Thermometer ID #113** **Standard:** ☒ **Bacteria (only):** ☐ **Cool Intact:** ☐ **Observed Temp. °C:** **Corrected Temp. °C:** 4.92 **Corrected Temp. °C:** 4.92

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





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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Pg. 2 of 2

Company Name: Ensolum, LLC		<b>BILL TO</b>		ANALYSIS REQUEST	
Project Manager: Beaux Jennings		P.O. #:			
Address: 601 N Marland Street, Suite 400		Company: Oxy USA Inc.			
City: Midland		Attn: Wade Dittrich			
State: TX Zip: 79701		Address:			
Phone #: 210-219-8858 Fax #:		City:			
Project #: 03141761 Project Owner:		State:			
Project Name: Surface SDS 11-1 SUD		Zip:			
Project Location: Eddy County		Phone #: 575-390-2828			
Sample Name: Slurp Piller		Fax #:			
FOR LAB USE ONLY		PRESERV		SAMPLING	
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	
			GROUNDWATER		
			WASTEWATER		
			SOIL		
			OIL		
			SLUDGE		
			OTHER :		
			ACID/BASE:		
			ICE / COOL		
			OTHER :		
			DATE	TIME	
11	FS-15	0 - 25'	12/28/22	1000	TPH 8015 M
12	FS-16	0 - 25'	12/28/22	1002	BTEX 8021 B
13	FS-17	0 - 25'	12/28/22	1004	Chlorides 4500
14	FS-18	0 - 25'	12/28/22	1006	
15	FS-19	0 - 25'	12/28/22	1010	
16	FS-20	0 - 25'	12/28/22	1012	
17	FS-21	0 - 25'	12/28/22	1014	
18	FS-22	0 - 25'	12/28/22	1016	
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Relinquished By: <i>[Signature]</i>		Date: 12/28/22		Received By: <i>[Signature]</i>	
Time: 1341					
Relinquished By: <i>[Signature]</i>		Date: 12/28/22		Received By: <i>[Signature]</i>	
Time: 1341					
Delivered By: (Circle One) <i>[Signature]</i>		Overserved Temp.: 5.5°		Sample Condition: <i>[Signature]</i>	
Sampler - UPS - Bus - Other:		Corrected Temp.: 4.9°		Cool Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
				CHECKED BY: <i>[Signature]</i>	
				Thermometer ID #113	
				Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
				Bacteria (only) <input type="checkbox"/> Sample Condition <input type="checkbox"/>	
				Cool Intact <input type="checkbox"/> Observed Temp.: °C	
				Corrected Temp.: °C	

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

12/28





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

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September 20, 2023

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

RE: SUNDANCE SDS 11-1 SWD

Enclosed are the results of analyses for samples received by the laboratory on 09/14/23 15:07.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

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: 09/14/2023  
 Reported: 09/20/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shari Cisneros

**Sample ID: FS - 8 .25' - .5' (H234988-01)**

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	09/15/2023	ND	416	104	400	3.77		

**Sample ID: FS - 9 .25' - .5' (H234988-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2640	16.0	09/15/2023	ND	416	104	400	3.77	

**Sample ID: FS - 10 .25' - .5' (H234988-03)**

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	09/15/2023	ND	416	104	400	3.77	

**Sample ID: FS - 11 .25' - .5' (H234988-04)**

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	09/15/2023	ND	416	104	400	3.77	

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: 09/14/2023  
 Reported: 09/20/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shari Cisneros

**Sample ID: FS - 12 .25' - .5' (H234988-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	09/15/2023	ND	416	104	400	3.77		

**Sample ID: FS - 13 .25' - .5' (H234988-06)**

Chloride, SM4500Cl-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	09/15/2023	ND	416	104	400	3.77		

**Sample ID: FS - 14 .25' - .5' (H234988-07)**

Chloride, SM4500Cl-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	09/15/2023	ND	416	104	400	3.77		

**Sample ID: FS - 15 .25' - .5' (H234988-08)**

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	09/15/2023	ND	416	104	400	3.77		

**Sample ID: FS - 16 .25' - .5' (H234988-09)**

Chloride, SM4500Cl-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	09/15/2023	ND	416	104	400	3.77		

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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: 09/14/2023  
 Reported: 09/20/2023  
 Project Name: SUNDANCE SDS 11-1 SWD  
 Project Number: 03B1417061  
 Project Location: OXY - EDDY CO., NM

Sampling Date: 09/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shari Cisneros

**Sample ID: FS - 17 .25' - .5' (H234988-10)**

Chloride, SM4500Cl-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	09/15/2023	ND	416	104	400	3.77		

**Sample ID: FS - 18 .25' - .5' (H234988-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/15/2023	ND	416	104	400	3.77		

**Sample ID: FS - 19 .25' - .5' (H234988-12)**

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	09/15/2023	ND	416	104	400	3.77	

**Sample ID: FS - 20 .25' - .5' (H234988-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/15/2023	ND	416	104	400	3.77		

**Sample ID: FS - 21 .25' - .5' (H234988-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/15/2023	ND	416	104	400	3.77		

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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: 09/14/2023  
Reported: 09/20/2023  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 09/14/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shari Cisneros

**Sample ID: FS - 22 .25' - .5' (H234988-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	09/15/2023	ND	416	104	400	3.77		

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

Celey D. Keene, Lab Director/Quality Manager

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### Notes and Definitions

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

---

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

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Celey D. Keene, Lab Director/Quality Manager

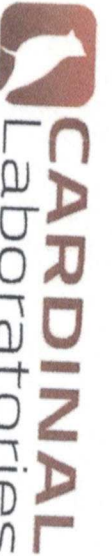


**101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476**

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensoulum, LLC Project Manager: Beaux Jennings Address: 601 N Marientfield Street, Suite 400 City: Midland Phone #: 210-219-8858 Project #: 03B1417061 Project Name: Sundance SDS 11-1 SWD Project Location: Eddy Co, NM Sampler Name: J. Gable										<b>BILL TO</b> P.O. #: Company: Oxy USA Inc. Attn: Wade Dittich Address: City: State: Zip: Phone #: 575-390-2828 Fax #:										<b>ANALYSIS REQUEST</b>									
Lab I.D. Sample I.D. Depth (feet) H234988 FS-8 .25'-.5' C1 FS-9 FS-10 FS-11 FS-12 FS-13 FS-14 FS-15 FS-16 FS-17 .25'-.5' C1										(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER : DATE TIME										MATRIX PRESERV SAMPLING chloride 4500									
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Delivered By: (Circle One) Sampler - UPS - Bus - Other:										Observed Temp.: 3.5°C Corrected Temp.:										Sample Condition Cool Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Checked By: (Initials)									
Reimbursed By:										Date: 9/14/23 Time: 1507 Received By:										Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID #773 #1440 Correction Factor .05°C									
REMARKS:										Bacteria (only) Sample Condition Cool Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Corrected Temp.:																			





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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>					
Project Manager: Beaux Jennings				P.O. #:									
Address: 601 N Marientfeld Street, Suite 400				Company: Oxy USA Inc.									
City: Midland				Attn: Wade Dietrich									
Phone #: 210-219-8858				Address:									
Fax #: 210-219-8858				City:									
Project #: 03B1417061				State:									
Project Name: Sundance SDS 11-1 SWD				Zip:									
Project Location: Eddy Co, NM				Phone #: 575-390-2828									
Sample Name: J. Goble				Fax #:									
FOR LAB USE ONLY													
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX		PRESERV.	SAMPLING					
					GROUNDWATER								
					WASTEWATER								
					SOIL								
					OIL								
					SLUDGE								
					OTHER :								
					ACID/BASE:								
					ICE / COOL								
					OTHER :								
					DATE	TIME							
11	FS-18	.25'-.5'	C1	X	9/14/23	1038	X		chloride 4500				
13	FS-19												
13	FS-20												
14	FS-21												
15	FS-22	.25'-.5'	C1	X	9/14/23	1030	X						
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Relinquished By: <i>[Signature]</i>													
Date: 9/14/23													
Time: 507													
Received By: <i>[Signature]</i>													
Date:													
Time:													
REMARKS:													
Delivered By: (Circle One) <u>Observed Temp. °C</u>													
Sampler - UPS - Bus - Other: <u>Corrected Temp. °C</u>													
FORM-000 R-3-2 T0077121													
Cardinal cannot accept verbal changes. Please email changes to caley.keene@cardinallabsnm.com													
Turnaround Time: <u>Standard</u> <input checked="" type="checkbox"/> <u>Rush</u> <input type="checkbox"/>													
Thermometer ID #448 <u>1140</u>													
Corrosion Factor <u>0.56</u>													
Bacteria (only) Sample Condition <input checked="" type="checkbox"/> Cool Intact <input type="checkbox"/>													
Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>													
Observed Temp. °C													
Corrected Temp. °C													





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

---

October 16, 2023

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

RE: SUNDANCE SDS 11-1 SWD

Enclosed are the results of analyses for samples received by the laboratory on 10/11/23 16:34.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

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: 10/11/2023  
Reported: 10/16/2023  
Project Name: SUNDANCE SDS 11-1 SWD  
Project Number: 03B1417061  
Project Location: OXY - EDDY CO., NM

Sampling Date: 10/11/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: FS - 9 0.5-0.75' (H235556-01)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/12/2023	ND	432	108	400	0.00	

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

Celey D. Keene, Lab Director/Quality Manager

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---

**Notes and Definitions**

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

---

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---

Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]





## 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	nAPP2224356841
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Oxy USA Inc.	OGRID: 16696
Contact Name: Wade Dittrich	Contact Telephone: 575-390-2828
Contact email: wade_dittrich@oxy.com	Incident # nAPP2224356841
Contact mailing address: PO Box 4294, Houston, TX 77210	

Location of Release Source

Latitude 32.228333 Longitude -103.731944  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Sundance-SDS 11-1 SWD	Site Type: Oil/Produced Water Gathering Line
Date Release Discovered: 8/30/2022	API# (if applicable)

Unit Letter	Section	Township	Range	County
K	11	24S	31E	Eddy

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): 50	Volume Recovered (bbls): 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" 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: 4-inch poly line failure.

State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2224356841
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?

☒ Yes ☐ 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@state.nm.us](mailto:OCD.enviro@state.nm.us) and [BLM\\_NM\\_CFO\\_Spill@blm.gov](mailto:BLM_NM_CFO_Spill@blm.gov) on 8/31/2022 at 1235.

### 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.

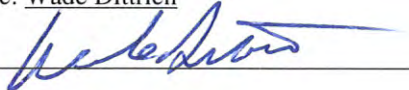
If all the actions described above have not been undertaken, explain why:

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: Wade Dittrich

Title: Environmental Specialist

Signature: 

Date: 1-23-23

email: [wade\\_dittrich@oxy.com](mailto:wade_dittrich@oxy.com)

Telephone: 575-390-2828

#### OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Incident ID	nAPP2224356841
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>&gt;100</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 <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input 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 procedures and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.



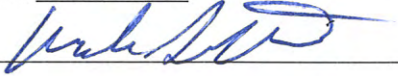
State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2224356841
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: Wade Dittrich

Title: Environmental Specialist

Signature: 

Date: 1-23-23

email: wade\_dittrich@oxy.com

Telephone: 575-390-2828

**OCD Only**

Received by: \_\_\_\_\_

Date: \_\_\_\_\_

State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2224356841
District RP	
Facility ID	
Application ID	


## 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: Wade DittrichTitle: Environmental SpecialistSignature: Date: 1-23-23email: wade\_dittrich@oxy.comTelephone: 575-390-2828**OCD Only**

Received by: \_\_\_\_\_

Date: \_\_\_\_\_

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: Scott RodgersDate: 01/30/2024Printed Name: Scott RodgersTitle: Environmental Specialist Adv.

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
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Energy, Minerals and Natural Resources  
Oil Conservation Division  
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Santa Fe, NM 87505

QUESTIONS  
  
Action 293332

QUESTIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID:	16696
	Action Number:	293332
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2224356841
Incident Name	NAPP2224356841 SUNDANCE SDS 11-1 SWD @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received

Location of Release Source	
Please answer all the questions in this group.	
Site Name	SUNDANCE SDS 11-1 SWD
Date Release Discovered	08/30/2022
Surface Owner	Federal

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

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Blow Out   Pipeline (Any)   Produced Water   Released: 50 BBL   Recovered: 0 BBL   Lost: 50 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 293332

**QUESTIONS (continued)**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID:	16696
	Action Number:	293332
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	<b>Yes</b>
Reasons why this would be considered a submission for a notification of a major release	<b>From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.</b>
<i>With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.</i>	

**Initial Response**

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

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

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

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

I hereby agree and sign off to the above statement	Name: Wade Dittrich Title: Environmental Coordinator Email: wade_dittrich@oxy.com Date: 12/11/2023
--	---



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**Santa Fe, NM 87505**

QUESTIONS, Page 3

Action 293332

**QUESTIONS (continued)**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID:	16696
	Action Number:	293332
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS****Site Characterization**

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

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	Attached Document
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	None
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

**Remediation Plan**

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

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

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

Chloride (EPA 300.0 or SM4500 Cl B)	20000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	44.4
GRO+DRO (EPA SW-846 Method 8015M)	33.4
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0

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

On what estimated date will the remediation commence	09/27/2022
On what date will (or did) the final sampling or liner inspection occur	10/11/2023
On what date will (or was) the remediation complete(d)	10/11/2023
What is the estimated surface area (in square feet) that will be reclaimed	5400
What is the estimated volume (in cubic yards) that will be reclaimed	100
What is the estimated surface area (in square feet) that will be remediated	5400
What is the estimated volume (in cubic yards) that will be remediated	100

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

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

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QUESTIONS, Page 4

Action 293332

**QUESTIONS (continued)**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID:	16696
	Action Number:	293332
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS****Remediation Plan (continued)**

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

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

(Select all answers below that apply.)

(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	LEA LAND LANDFILL [fEEM0112342028]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

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

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

I hereby agree and sign off to the above statement	Name: Wade Dittrich Title: Environmental Coordinator Email: wade_dittrich@oxy.com Date: 12/11/2023
--	---

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

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QUESTIONS, Page 5  
  
Action 293332

**QUESTIONS (continued)**

Operator:  OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID:  16696
	Action Number:  293332
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Deferral Requests Only</b>	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 293332

**QUESTIONS (continued)**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID:	16696
	Action Number:	293332
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Sampling Event Information</b>	
Last sampling notification (C-141N) recorded	293331
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	09/14/2023
What was the (estimated) number of samples that were to be gathered	26
What was the sampling surface area in square feet	5600

**Remediation Closure Request**

*Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.*

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	5400
What was the total volume (cubic yards) remediated	100
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	5400
What was the total volume (in cubic yards) reclaimed	100
Summarize any additional remediation activities not included by answers (above)	None

*The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.*

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

I hereby agree and sign off to the above statement	Name: Wade Dittrich Title: Environmental Coordinator Email: wade_dittrich@oxy.com Date: 12/11/2023
--	---



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QUESTIONS, Page 7  
  
Action 293332

QUESTIONS (continued)

Operator:  OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID:  16696
	Action Number:  293332
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

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

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CONDITIONS  
  
Action 293332

CONDITIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID:
	16696
	Action Number: 293332
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	None	1/30/2024