ENSOLUM

June 27, 2024

New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Remediation Report and Closure Request
Sunray G #1A
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident No: nAPP2410829165

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), has prepared this *Remediation Report and Closure Request* associated with a crude oil release at the Sunray G #1A natural gas production well (Site). The Site is located on surface managed by the Bureau of Land Management (BLM) in Unit E, Section 21, Township 31 North, Range 9 West, San Juan County, New Mexico (Figure 1).

SITE BACKGROUND

On April 11, 2024, a release of crude oil from a below grade tank (BGT) at the production well (API: 30-045-22815), located at latitude 36.88665 North and longitude 107.79090 West, occurred due to liquid level controller failure. This failure resulted in the BGT overflowing into an unlined secondary containment. Hilcorp immediately implemented corrective action and dispatched a vacuum truck to remove the retained fluids from within the secondary containment. In total, approximately 16.5 barrels (bbls) of crude oil were released and 15 bbls were recovered with the vacuum truck.

In accordance with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) Hilcorp notified the New Mexico Oil Conservation Division (NMOCD) and the BLM on April 11, 2024. The Site has been assigned NMOCD Incident Number nAPP2410829165.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

An assessment of potential nearby receptors was conducted through desktop reviews of topographic maps, Federal Emergency Management Administration (FEMA) Geographic Information System (GIS) maps, United States Geological Survey (USGS) GIS maps, New Mexico Office of the State Engineer (NMOSE) database, and aerial photographs, as well as Site-specific observations.

GEOLOGY AND HYDROGEOLOGY

The Site is located in Tertiary (Eocene) age San Jose Formation and is underlain by the Nacimiento Geologic Formation. In the report titled "Hydrogeology and Water Resources of San Juan Basin, New Mexico" (Stone, et. al., 1983), the San Jose Formation is composed of interbedded sandstones and mudstones and varies in thickness from less than 200 feet to about 2,700 feet. The hydrogeologic properties of the San Jose Formation are largely untested. Where sufficient yield is present, the primary use of water from this Formation is for domestic and/or livestock supply.

The closest significant watercourse is an unnamed dry wash located 444 feet northeast of the Site, which is defined by a bed and bank and is identified by a dashed blue line on a USGS 7.5-minute quadrangle map. The Site is greater than 200 feet from any lakebed, sinkhole, or playa lake, and greater than 300 feet from any wetland (Figure 1). The nearest fresh-water well is NMOSE permitted well SJ-00022 (Appendix A), located approximately 2,429 feet west of the Site. The recorded depth to water on the NMOSE database is 120 feet below ground surface (bgs). The well is approximately 194 feet lower in elevation than the Site, therefore depth to groundwater at the Site is estimated to be greater than 100 feet bgs. No wellhead protection areas, springs, or domestic/stock wells are located within a 1-mile radius from the Site. The Site is not within a 100-year floodplain, overlying a subsurface mine, or located within an area underlain by unstable geology (area designated as low potential karst by the BLM). Schools, hospitals, institutions, churches, and/or other occupied permanent residence or structures are not located within 300 feet of the Site.

SITE CLOSURE CRITERIA

Based on the information presented above and in accordance with the *Table I, Closure Criteria for Soils Impacted by a Release* (19.15.29.12 NMAC), the following Closure Criteria for constituents of concern (COCs) should be applied to the Site:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH) as a combination of gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO): 2,500 mg/kg
- GRO+DRO: 1,000 mg/kg
- Chloride: 20,000 mg/kg

DELINEATION SOIL SAMPLING ACTIVITIES

To assess potential soil impacts resulting from the release at the Site, Hilcorp retained Ensolum to collect soil samples on April 24, 2024. In the area where crude oil spread around the BGT, five hand auger borings were advanced (HA01 through HA05). Location HA01 was advanced within the release footprint to assess the vertical extent of impacts originating from the release. Locations HA02 through HA05 were subsequently advanced outside of the release footprint to assess the lateral extent of impacts (Figure 2). Soil samples were field screened for the presence of volatile organic compounds (VOCs) using a calibrated photoionization detector (PID), with results noted in Table 1.

Samples were submitted to Eurofins Environment Testing (Eurofins) in Albuquerque, New Mexico and analyzed for TPH following United States Environmental Protection Agency (EPA) Method 8015M/D, BTEX following EPA Method 8021B, and chloride following EPA Method 300.0. Analytical results indicated detections of TPH-GRO+DRO and total TPH in HA01 at 2 feet to 2.5 feet bgs exceeded the NMOCD Closure Criteria. Concentrations of TPH-GRO+DRO, TPH, BTEX, and chloride were not

detected above the applicable NMOCD Closure Criteria in any of the other analyzed samples collected during delineation activities.

EXCAVATION AND CONFIRMATION SOIL SAMPLING ACTIVITIES

Based on the delineation sampling results described above, the BGT was removed on June 13, 2024, and the identified impacts in the vicinity of HA01 were excavated for off-Site disposal at the Envirotech Landfarm in San Juan County, New Mexico. Ensolum personnel conducted excavation oversight and sampling activities during this work. Notification to the NMOCD was provided at least two business days prior to conducting remediation and sampling work, with correspondence attached in Appendix B. To direct excavation activities, Ensolum personnel field screened soil for VOCs using a calibrated PID.

The resulting excavation extended to depths of 4 feet to 4.5 feet bgs and had a footprint of approximately 400 square feet. A total of two confirmation sidewall samples (SW01 and SW02) and two floor samples (FS01 and FS02) were collected from the final excavation extents (Figure 3). All confirmation samples consisted of 5-point composite samples collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The soil samples were placed into laboratory provided containers and transported under proper chain of custody procedures to Eurofins for analysis of TPH, BTEX, and chloride using the methods described above.

Analytical results from the excavation indicated all COC concentrations were compliant with the applicable NMOCD Table I Closure Criteria. Soil sample analytical results are summarized in Table 1, with complete laboratory analytical reports attached as Appendix C. Photographs taken during field activities are attached as Appendix D.

CLOSURE REQUEST

Corrective actions and soil sampling activities were conducted at the Site to address the release of crude oil discovered on April 11, 2024. Laboratory analytical results for the confirmation soil samples, collected from the final extents of the excavation, indicated all COC concentrations were compliant with the Site Closure Criteria and no further remediation is required. The corrective action initiated by Hilcorp has mitigated impacts at this Site and these remedial actions have been protective of human health, the environment, and groundwater. As such, Hilcorp respectfully request closure for Incident Number nAPP2410829165.

REFERENCES

Stone, W., Lyford, F., Frenzel, P., Mizell, N., & Padgett, E. (1983). Hydrogeology and Water Resources of San Juan Basin, New Mexico. New Mexico Bureau of Mines & Mineral Resources.

We appreciate the opportunity to provide this report to the NMOCD. If you have any questions or comments regarding this document, please contact the undersigned.

Sincerely,
Ensolum, LLC

Sidney Mahanay
Project Geologist
(979) 877-8887
smahanay@ensolum.com

Stuart Hyde
Senior Managing Geologist
(970) 903-1607
shyde@ensolum.com

Attachments:

Figure 1: Site Receptor Map
Figure 2: Delineation Soil Sample Locations
Figure 3: Excavation Soil Sample Map

Table 1: Soil Sample Analytical Results

Appendix A: NMOSE Point of Diversion Summary
Appendix B: Agency Correspondence
Appendix C: Laboratory Analytical Reports
Appendix D: Photographic Log

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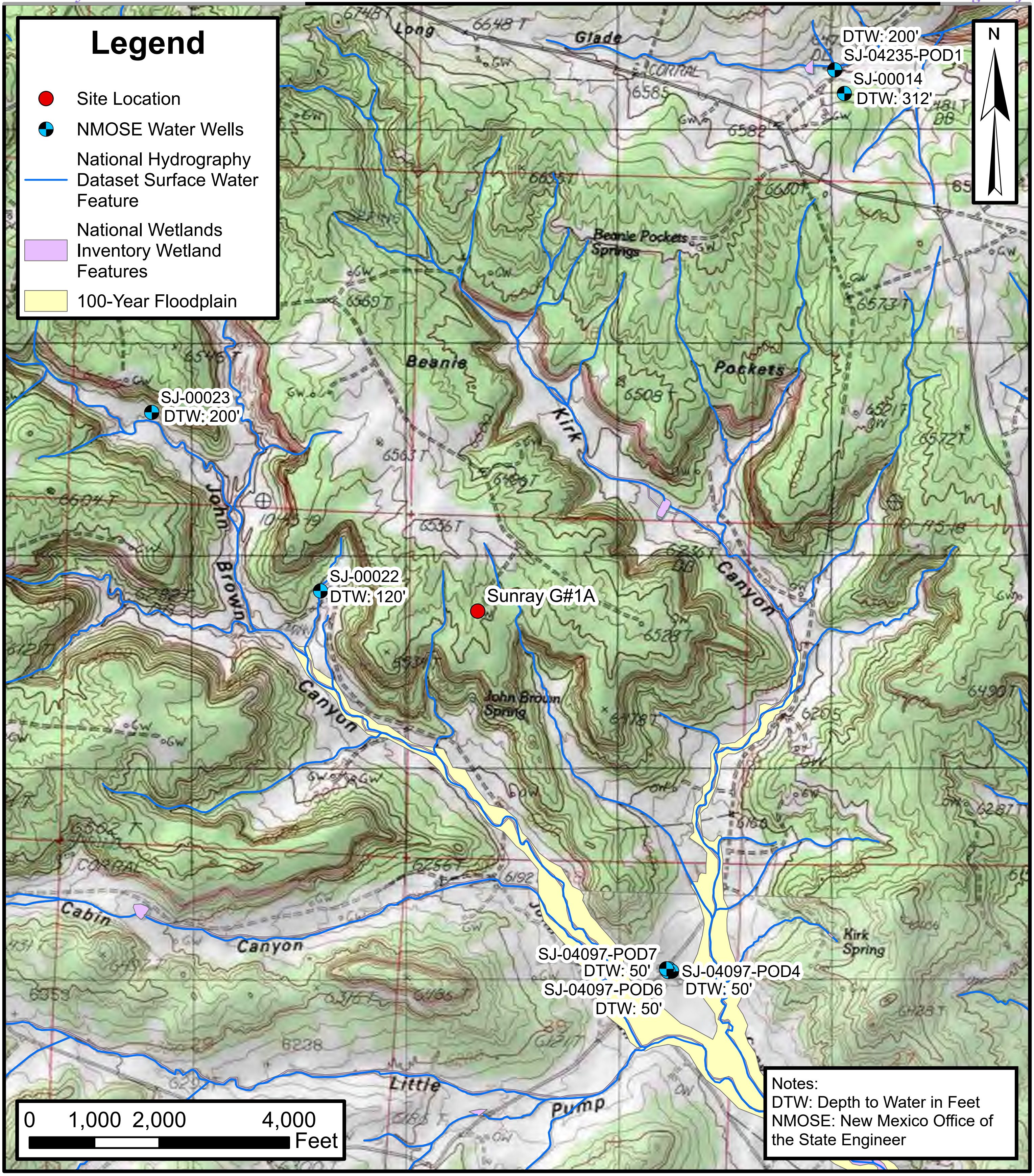
FIGURES



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Environmental, Engineering and Hydrogeologic Consultants

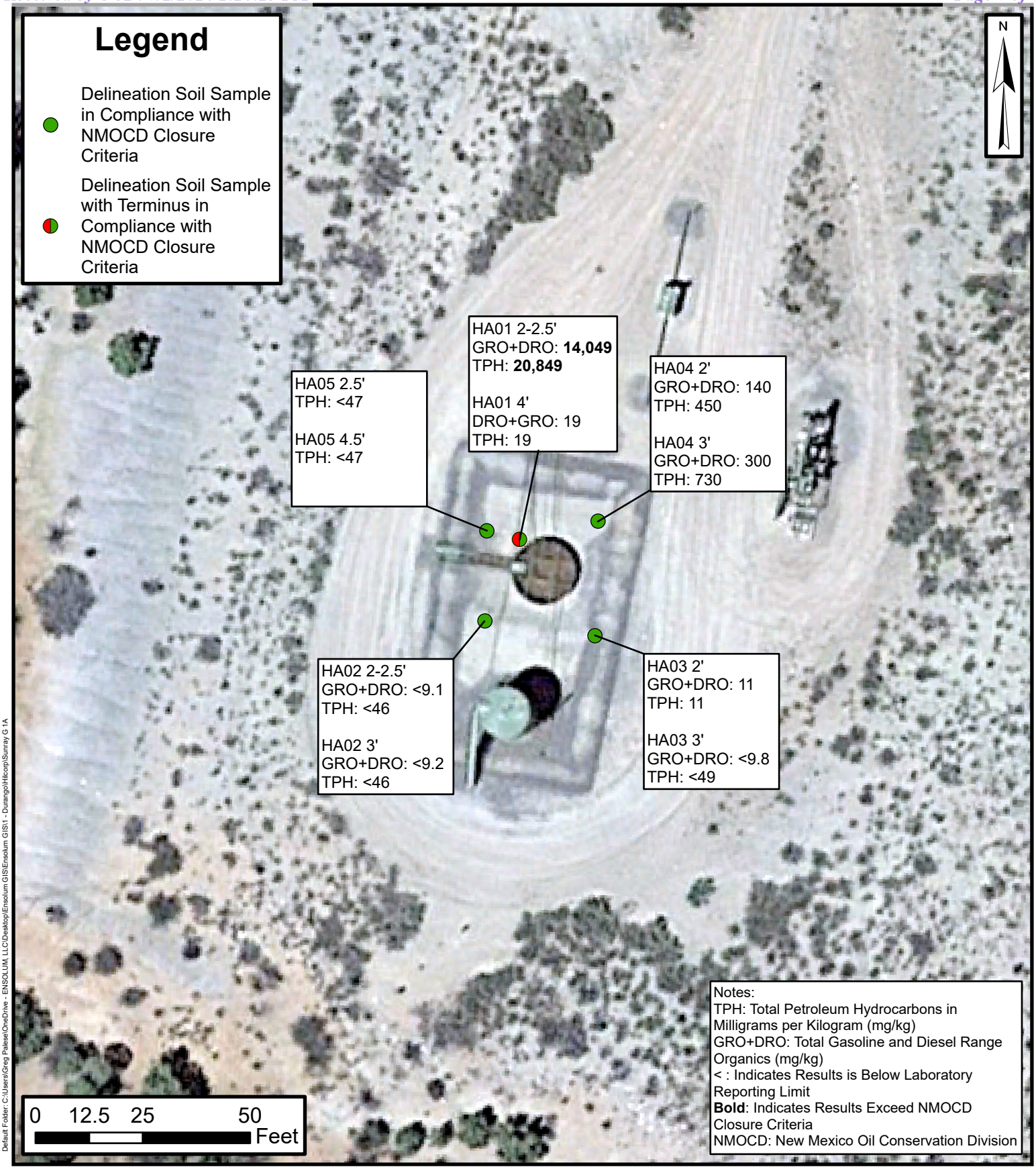
Site Receptor Map

Sunray G #1A
Hilcorp Energy Company

36.88665, -107.79090
San Juan County, New Mexico

FIGURE
1

Sources: Environmental Systems Research Institute (ESRI), United States Geologic Survey (USGS), United States Fish and Wildlife Service (USFWS), National Geographic Society, i-cubed



Default Folder: C:\Users\Greg Pates\OneDrive - ENSOLUM, LLC\Desktop\Ensolum GIS\Ensolum GIS\1 - Durango\Hilcorp\Sunray G 1A

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Delineation Soil Sample Locations

Sunray G #1A
Hilcorp Energy Company

36.88665, -107.79090
San Juan County, New Mexico

FIGURE
2

Sources: Google Earth

Default Folder: C:\Users\Greg Pates\OneDrive - ENSOLUM, LLC\Desktop\Ensolum GIS\Ensolum GIS\1 - Durango\Hilcorp\Sunray G 1A

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Excavation Soil Sample Map

Sunray G #1A
Hilcorp Energy Company

36.88665, -107.79090
San Juan County, New Mexico

FIGURE
3

Sources: Google Earth

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Sunray G #1A
Hilcorp Energy Company
San Juan County, New Mexico

Sample Identification	Date	Depth (feet bgs)	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	GRO + DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Closure Criteria for Soils Impacted by a Release			NE	**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**
Delineation Soil Samples														
~~HA01 2-2.5'~~	~~4/24/2024~~	~~2-2.5~~	~~209.4~~	~~<0.12~~	~~<0.24~~	~~<0.24~~	~~2.4~~	~~2.4~~	~~49~~	~~14,000~~	~~6,800~~	~~**14,049**~~	~~**20,849**~~	~~7.9~~
HA01 4'	4/24/2024	4	5.4	<0.023	<0.046	<0.046	<0.092	<0.092	<4.6	19	<47	19	19	37
HA02 2-2.5`	4/24/2024	2 - 2.5	1.2	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	<9.1	<46	<9.1	<46	<5.1
HA02 3'	4/24/2024	3	0.7	<0.025	<0.049	<0.049	<0.099	<0.099	<4.9	<9.2	<46	<9.2	<46	<5.0
HA3 2'	4/24/2024	2	3.3	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	11	<46	11	11	<5.0
HA03 3'	4/24/2024	3	0.2	<0.023	<0.046	<0.046	<0.092	<0.092	<4.6	<9.8	<49	<9.8	<49	<5.0
HA04 2'	4/24/2024	2	4.5	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	140	310	140	450	<5.0
HA04 3'	4/24/2024	3	4.3	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	300	430	300	730	<5.0
HA05 2.5'	4/24/2024	2.5	4.0	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.4	<47	<9.4	<47	<5.0
HA05 4.5'	4/24/2024	4.5	0.9	<0.023	<0.046	<0.046	<0.092	<0.092	<4.6	<9.3	<47	<9.3	<47	27
Excavation Sidewall Confirmation Soil Samples														
SW01	6/13/2024	0 - 4.5	5.4	<0.0085	<0.017	<0.017	<0.034	<0.034	<1.7	90	130	90	220	<60
SW02	6/13/2024	0 - 4	20.1	<0.0094	<0.019	<0.019	<0.038	<0.038	<1.9	22	<43	22	22	<60
Excavation Floor Confirmation Soil Samples														
FS01	6/13/2024	4.5	1.8	<0.0096	<0.019	<0.019	<0.038	<0.038	<1.9	61	99	61	160	<60
FS02	6/13/2024	4	0.8	<0.0089	<0.018	<0.018	<0.036	<0.036	<1.8	59	<46	59	59	<60

Notes:

bgs: Below ground surface
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
mg/kg: Milligrams per kilogram
NE: Not Established
NMOCD: New Mexico Oil Conservation Division
PID: Photoionization detector
ppm: Parts per million
': feet
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
MRO: Motor Oil/Lube Oil Range Organics
TPH: Total Petroleum Hydrocarbon
< : Indicates result less than the stated laboratory reporting limit (RL)
*Concentrations in **bold** exceed the New Mexico Oil Conservation Division Table I Closure Criteria for Soils Impacted by a Release*
~~Grey~~ text indicates soil sample removed during excavation activities

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APPENDIX A

NMOSE Point of Diversion Summary

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	SJ 00022			2	20	31N	09W	250557	4086032*

Driller License:		**Driller Company:**			
Driller Name:	CONLEY COX				
Drill Start Date:	09/22/1953	**Drill Finish Date:**	09/22/1953	**Plug Date:**	
Log File Date:	12/03/1953	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:	JET	**Pipe Discharge Size:**		**Estimated Yield:**	38 GPM
Casing Size:	6.63	**Depth Well:**	202 feet	**Depth Water:**	120 feet

Water Bearing Stratifications:	Top	Bottom	Description
	140	170	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	130	202

***UTM location was derived from PLSS - see Help**

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APPENDIX B

Agency Correspondence

From: OCDOnline@state.nm.us
To: Stuart Hyde
Subject: The Oil Conservation Division (OCD) has accepted the application, Application ID: 352775
Date: Monday, June 10, 2024 4:06:30 PM

[**EXTERNAL EMAIL**]

To whom it may concern (c/o Stuart Hyde for HILCORP ENERGY COMPANY),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2410829165.

The sampling event is expected to take place:

When: 06/13/2024 @ 09:00
Where: E-21-31N-09W 1460 FNL 1105 FWL (36.88675,-107.79007)

Additional Information: Contact Site PM, Stuart Hyde; 970-903-1607

Additional Instructions: Sunray G 1A coordinates 36.88675, -107.79007

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

- **Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.**

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

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

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APPENDIX C

Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kate Kaufman
Hilcorp Energy
PO BOX 4700
Farmington, New Mexico 87499

Generated 5/1/2024 4:50:07 PM

JOB DESCRIPTION

Sunray G 1A

JOB NUMBER

885-3394-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization

Generated
5/1/2024 4:50:07 PM

Authorized for release by
Andy Freeman, Business Unit Manager
andy.freeman@et.eurofinsus.com
(505)345-3975

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Laboratory Job ID: 885-3394-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

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

Case Narrative

Client: Hilcorp Energy
Project: Sunray G 1A

Job ID: 885-3394-1

Job ID: 885-3394-1 Eurofins Albuquerque

Job Narrative
885-3394-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/25/2024 6:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.5°C.

Receipt Exceptions
The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): HA05 2.5' (885-3394-9) and HA05 4.5' (885-3394-10). The container labels list HA05 2.5' & HA05 4.5', while the COC lists HA04 2.5' & HA04 4.5', . The client was contacted, and the lab was instructed to go with container label name and change on COC.

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

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

Diesel Range Organics
Method 8015D_DRO: The following samples were diluted due to the nature of the sample matrix: HA01 2-2.5' (885-3394-1) and HA04 3' (885-3394-8). Elevated reporting limits (RLs) are provided.

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

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

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA01 2-2.5'

Date Collected: 04/24/24 11:50
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-1

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	49		24		mg/Kg		04/25/24 12:10	04/27/24 01:17	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*170*		*15 - 244*	*04/25/24 12:10*	*04/27/24 01:17*	*5*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.12		mg/Kg		04/25/24 12:10	04/27/24 01:17	5
Ethylbenzene	ND		0.24		mg/Kg		04/25/24 12:10	04/27/24 01:17	5
Toluene	ND		0.24		mg/Kg		04/25/24 12:10	04/27/24 01:17	5
Xylenes, Total	2.4		0.49		mg/Kg		04/25/24 12:10	04/27/24 01:17	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*39 - 146*	*04/25/24 12:10*	*04/27/24 01:17*	*5*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	14000		480		mg/Kg		04/26/24 12:53	04/30/24 15:33	50
Motor Oil Range Organics [C28-C40]	6800		2400		mg/Kg		04/26/24 12:53	04/30/24 15:33	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*0*	*S1- D*	*62 - 134*	*04/26/24 12:53*	*04/30/24 15:33*	*50*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.9		5.0		mg/Kg			04/30/24 18:16	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA01 4'
Date Collected: 04/24/24 11:52
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-2
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6		mg/Kg		04/25/24 12:10	04/27/24 01:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*15 - 244*	*04/25/24 12:10*	*04/27/24 01:39*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		04/25/24 12:10	04/27/24 01:39	1
Ethylbenzene	ND		0.046		mg/Kg		04/25/24 12:10	04/27/24 01:39	1
Toluene	ND		0.046		mg/Kg		04/25/24 12:10	04/27/24 01:39	1
Xylenes, Total	ND		0.092		mg/Kg		04/25/24 12:10	04/27/24 01:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*39 - 146*	*04/25/24 12:10*	*04/27/24 01:39*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**19**		9.3		mg/Kg		04/26/24 12:53	04/30/24 16:45	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		04/26/24 12:53	04/30/24 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*04/26/24 12:53*	*04/30/24 16:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37**		5.0		mg/Kg			04/30/24 18:22	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA02 2-2.5'

Date Collected: 04/24/24 12:27
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-3

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8		mg/Kg		04/25/24 12:10	04/27/24 02:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*15 - 244*	*04/25/24 12:10*	*04/27/24 02:01*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		04/25/24 12:10	04/27/24 02:01	1
Ethylbenzene	ND		0.048		mg/Kg		04/25/24 12:10	04/27/24 02:01	1
Toluene	ND		0.048		mg/Kg		04/25/24 12:10	04/27/24 02:01	1
Xylenes, Total	ND		0.096		mg/Kg		04/25/24 12:10	04/27/24 02:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*39 - 146*	*04/25/24 12:10*	*04/27/24 02:01*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.1		mg/Kg		04/26/24 12:53	04/30/24 17:09	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		04/26/24 12:53	04/30/24 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*104*		*62 - 134*	*04/26/24 12:53*	*04/30/24 17:09*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.1		mg/Kg			04/30/24 18:40	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA02 3'

Date Collected: 04/24/24 12:25
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-4

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		04/25/24 12:10	04/27/24 02:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*15 - 244*	*04/25/24 12:10*	*04/27/24 02:22*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		04/25/24 12:10	04/27/24 02:22	1
Ethylbenzene	ND		0.049		mg/Kg		04/25/24 12:10	04/27/24 02:22	1
Toluene	ND		0.049		mg/Kg		04/25/24 12:10	04/27/24 02:22	1
Xylenes, Total	ND		0.099		mg/Kg		04/25/24 12:10	04/27/24 02:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*39 - 146*	*04/25/24 12:10*	*04/27/24 02:22*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.2		mg/Kg		04/26/24 12:53	04/30/24 19:36	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		04/26/24 12:53	04/30/24 19:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*105*		*62 - 134*	*04/26/24 12:53*	*04/30/24 19:36*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.0		mg/Kg			04/30/24 18:47	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA03 2'

Date Collected: 04/24/24 12:55
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-5

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.9		mg/Kg		04/25/24 12:10	04/27/24 02:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*15 - 244*	*04/25/24 12:10*	*04/27/24 02:44*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		04/25/24 12:10	04/27/24 02:44	1
Ethylbenzene	ND		0.049		mg/Kg		04/25/24 12:10	04/27/24 02:44	1
Toluene	ND		0.049		mg/Kg		04/25/24 12:10	04/27/24 02:44	1
Xylenes, Total	ND		0.098		mg/Kg		04/25/24 12:10	04/27/24 02:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*	*04/25/24 12:10*	*04/27/24 02:44*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**11**		9.1		mg/Kg		04/26/24 12:53	04/30/24 20:00	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		04/26/24 12:53	04/30/24 20:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*112*		*62 - 134*	*04/26/24 12:53*	*04/30/24 20:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.0		mg/Kg			04/30/24 18:53	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA03 3'

Date Collected: 04/24/24 12:57
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-6

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6		mg/Kg		04/25/24 12:10	04/27/24 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*15 - 244*	*04/25/24 12:10*	*04/27/24 03:06*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		04/25/24 12:10	04/27/24 03:06	1
Ethylbenzene	ND		0.046		mg/Kg		04/25/24 12:10	04/27/24 03:06	1
Toluene	ND		0.046		mg/Kg		04/25/24 12:10	04/27/24 03:06	1
Xylenes, Total	ND		0.092		mg/Kg		04/25/24 12:10	04/27/24 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*04/25/24 12:10*	*04/27/24 03:06*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.8		mg/Kg		04/26/24 12:53	04/30/24 20:24	1
Motor Oil Range Organics [C28-C40]	ND		49		mg/Kg		04/26/24 12:53	04/30/24 20:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*103*		*62 - 134*	*04/26/24 12:53*	*04/30/24 20:24*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.0		mg/Kg			04/30/24 18:59	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA04 2'
Date Collected: 04/24/24 14:15
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-7
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8		mg/Kg		04/25/24 12:10	04/27/24 03:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*15 - 244*	*04/25/24 12:10*	*04/27/24 03:28*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		04/25/24 12:10	04/27/24 03:28	1
Ethylbenzene	ND		0.048		mg/Kg		04/25/24 12:10	04/27/24 03:28	1
Toluene	ND		0.048		mg/Kg		04/25/24 12:10	04/27/24 03:28	1
Xylenes, Total	ND		0.096		mg/Kg		04/25/24 12:10	04/27/24 03:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*	*04/25/24 12:10*	*04/27/24 03:28*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**140**		8.6		mg/Kg		04/26/24 12:53	04/30/24 20:49	1
Motor Oil Range Organics [C28-C40]	**310**		43		mg/Kg		04/26/24 12:53	04/30/24 20:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*123*		*62 - 134*	*04/26/24 12:53*	*04/30/24 20:49*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.0		mg/Kg			04/30/24 19:05	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA04 3'

Date Collected: 04/24/24 14:17
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-8

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8		mg/Kg		04/25/24 12:10	04/27/24 03:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*15 - 244*	*04/25/24 12:10*	*04/27/24 03:50*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		04/25/24 12:10	04/27/24 03:50	1
Ethylbenzene	ND		0.048		mg/Kg		04/25/24 12:10	04/27/24 03:50	1
Toluene	ND		0.048		mg/Kg		04/25/24 12:10	04/27/24 03:50	1
Xylenes, Total	ND		0.096		mg/Kg		04/25/24 12:10	04/27/24 03:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*39 - 146*	*04/25/24 12:10*	*04/27/24 03:50*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**300**		19		mg/Kg		04/26/24 12:53	04/30/24 15:57	2
Motor Oil Range Organics [C28-C40]	**430**		95		mg/Kg		04/26/24 12:53	04/30/24 15:57	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*127*		*62 - 134*	*04/26/24 12:53*	*04/30/24 15:57*	*2*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.0		mg/Kg			04/30/24 19:11	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA05 2.5'

Date Collected: 04/24/24 14:19
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-9

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		04/25/24 12:10	04/27/24 04:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*15 - 244*	*04/25/24 12:10*	*04/27/24 04:33*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		04/25/24 12:10	04/27/24 04:33	1
Ethylbenzene	ND		0.050		mg/Kg		04/25/24 12:10	04/27/24 04:33	1
Toluene	ND		0.050		mg/Kg		04/25/24 12:10	04/27/24 04:33	1
Xylenes, Total	ND		0.10		mg/Kg		04/25/24 12:10	04/27/24 04:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*39 - 146*	*04/25/24 12:10*	*04/27/24 04:33*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.4		mg/Kg		04/26/24 12:53	04/30/24 21:38	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		04/26/24 12:53	04/30/24 21:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*122*		*62 - 134*	*04/26/24 12:53*	*04/30/24 21:38*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.0		mg/Kg			04/30/24 19:30	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA05 4.5'

Date Collected: 04/24/24 14:21
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-10

Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.6		mg/Kg		04/25/24 12:10	04/27/24 04:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*15 - 244*	*04/25/24 12:10*	*04/27/24 04:55*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.023		mg/Kg		04/25/24 12:10	04/27/24 04:55	1
Ethylbenzene	ND		0.046		mg/Kg		04/25/24 12:10	04/27/24 04:55	1
Toluene	ND		0.046		mg/Kg		04/25/24 12:10	04/27/24 04:55	1
Xylenes, Total	ND		0.092		mg/Kg		04/25/24 12:10	04/27/24 04:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*	*04/25/24 12:10*	*04/27/24 04:55*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		9.3		mg/Kg		04/26/24 12:53	04/29/24 23:14	1
Motor Oil Range Organics [C28-C40]	ND		47		mg/Kg		04/26/24 12:53	04/29/24 23:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*111*		*62 - 134*	*04/26/24 12:53*	*04/29/24 23:14*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**27**		5.0		mg/Kg			04/30/24 19:36	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-3834/1-A
Matrix: Solid
Analysis Batch: 4029

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 3834

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		04/24/24 13:52	04/26/24 11:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*15 - 244*	*04/24/24 13:52*	*04/26/24 11:50*	*1*

Lab Sample ID: MB 885-3888/1-A
Matrix: Solid
Analysis Batch: 4029

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 3888

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		04/25/24 12:10	04/26/24 22:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*15 - 244*	*04/25/24 12:10*	*04/26/24 22:44*	*1*

Lab Sample ID: LCS 885-3888/2-A
Matrix: Solid
Analysis Batch: 4029

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 3888

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			25.0	25.1		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*224*		*15 - 244*

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-3834/1-A
Matrix: Solid
Analysis Batch: 4030

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 3834

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		04/24/24 13:52	04/26/24 11:50	1
Ethylbenzene	ND		0.050		mg/Kg		04/24/24 13:52	04/26/24 11:50	1
Toluene	ND		0.050		mg/Kg		04/24/24 13:52	04/26/24 11:50	1
Xylenes, Total	ND		0.10		mg/Kg		04/24/24 13:52	04/26/24 11:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*39 - 146*	*04/24/24 13:52*	*04/26/24 11:50*	*1*

Lab Sample ID: MB 885-3888/1-A
Matrix: Solid
Analysis Batch: 4030

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 3888

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		04/25/24 12:10	04/26/24 22:44	1
Ethylbenzene	ND		0.050		mg/Kg		04/25/24 12:10	04/26/24 22:44	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

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

Lab Sample ID: MB 885-3888/1-A
Matrix: Solid
Analysis Batch: 4030

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 3888

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		0.050		mg/Kg		04/25/24 12:10	04/26/24 22:44	1
Xylenes, Total	ND		0.10		mg/Kg		04/25/24 12:10	04/26/24 22:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*	*04/25/24 12:10*	*04/26/24 22:44*	*1*

Lab Sample ID: LCS 885-3888/3-A
Matrix: Solid
Analysis Batch: 4030

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 3888

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			1.00	0.910		mg/Kg		91	70 - 130		
Ethylbenzene			1.00	0.927		mg/Kg		93	70 - 130		
m&p-Xylene			2.00	1.85		mg/Kg		92	70 - 130		
o-Xylene			1.00	0.925		mg/Kg		92	70 - 130		
Toluene			1.00	0.919		mg/Kg		92	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-3963/1-A
Matrix: Solid
Analysis Batch: 4042

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 3963

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		04/26/24 12:53	04/29/24 17:29	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		04/26/24 12:53	04/29/24 17:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*102*		*62 - 134*	*04/26/24 12:53*	*04/29/24 17:29*	*1*

Lab Sample ID: LCS 885-3963/2-A
Matrix: Solid
Analysis Batch: 4042

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 3963

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]			50.0	41.8		mg/Kg		84	60 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Di-n-octyl phthalate (Surr)	*100*		*62 - 134*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Method: 8015D - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 885-3394-10 MS
Matrix: Solid
Analysis Batch: 4042

Client Sample ID: HA05 4.5'
Prep Type: Total/NA
Prep Batch: 3963

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	ND		44.5	37.1		mg/Kg		83	44 - 136

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Di-n-octyl phthalate (Surr)	*114*		*62 - 134*

Lab Sample ID: 885-3394-10 MSD
Matrix: Solid
Analysis Batch: 4042

Client Sample ID: HA05 4.5'
Prep Type: Total/NA
Prep Batch: 3963

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	ND		43.3	33.3		mg/Kg		77	44 - 136	11	32

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Di-n-octyl phthalate (Surr)	*107*		*62 - 134*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-79680/1-A
Matrix: Solid
Analysis Batch: 79687

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.0		mg/Kg			04/30/24 17:26	1

Lab Sample ID: LCS 880-79680/2-A
Matrix: Solid
Analysis Batch: 79687

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			250	252		mg/Kg		101	90 - 110

Lab Sample ID: LCSD 880-79680/3-A
Matrix: Solid
Analysis Batch: 79687

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	253		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 885-3394-8 MS
Matrix: Solid
Analysis Batch: 79687

Client Sample ID: HA04 3'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	ND		250	249		mg/Kg		98	90 - 110

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 885-3394-8 MSD
Matrix: Solid
Analysis Batch: 79687

Client Sample ID: HA04 3'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	ND		250	249		mg/Kg		98	90 - 110	0	20

QC Association Summary

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

GC VOA

Prep Batch: 3834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 885-3834/1-A	Method Blank	Total/NA	Solid	5030C	

Prep Batch: 3888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3394-1	HA01 2-2.5'	Total/NA	Solid	5030C	
885-3394-2	HA01 4'	Total/NA	Solid	5030C	
885-3394-3	HA02 2-2.5'	Total/NA	Solid	5030C	
885-3394-4	HA02 3'	Total/NA	Solid	5030C	
885-3394-5	HA03 2'	Total/NA	Solid	5030C	
885-3394-6	HA03 3'	Total/NA	Solid	5030C	
885-3394-7	HA04 2'	Total/NA	Solid	5030C	
885-3394-8	HA04 3'	Total/NA	Solid	5030C	
885-3394-9	HA05 2.5'	Total/NA	Solid	5030C	
885-3394-10	HA05 4.5'	Total/NA	Solid	5030C	
MB 885-3888/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-3888/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-3888/3-A	Lab Control Sample	Total/NA	Solid	5030C	

Analysis Batch: 4029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3394-1	HA01 2-2.5'	Total/NA	Solid	8015D	3888
885-3394-2	HA01 4'	Total/NA	Solid	8015D	3888
885-3394-3	HA02 2-2.5'	Total/NA	Solid	8015D	3888
885-3394-4	HA02 3'	Total/NA	Solid	8015D	3888
885-3394-5	HA03 2'	Total/NA	Solid	8015D	3888
885-3394-6	HA03 3'	Total/NA	Solid	8015D	3888
885-3394-7	HA04 2'	Total/NA	Solid	8015D	3888
885-3394-8	HA04 3'	Total/NA	Solid	8015D	3888
885-3394-9	HA05 2.5'	Total/NA	Solid	8015D	3888
885-3394-10	HA05 4.5'	Total/NA	Solid	8015D	3888
MB 885-3834/1-A	Method Blank	Total/NA	Solid	8015D	3834
MB 885-3888/1-A	Method Blank	Total/NA	Solid	8015D	3888
LCS 885-3888/2-A	Lab Control Sample	Total/NA	Solid	8015D	3888

Analysis Batch: 4030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3394-1	HA01 2-2.5'	Total/NA	Solid	8021B	3888
885-3394-2	HA01 4'	Total/NA	Solid	8021B	3888
885-3394-3	HA02 2-2.5'	Total/NA	Solid	8021B	3888
885-3394-4	HA02 3'	Total/NA	Solid	8021B	3888
885-3394-5	HA03 2'	Total/NA	Solid	8021B	3888
885-3394-6	HA03 3'	Total/NA	Solid	8021B	3888
885-3394-7	HA04 2'	Total/NA	Solid	8021B	3888
885-3394-8	HA04 3'	Total/NA	Solid	8021B	3888
885-3394-9	HA05 2.5'	Total/NA	Solid	8021B	3888
885-3394-10	HA05 4.5'	Total/NA	Solid	8021B	3888
MB 885-3834/1-A	Method Blank	Total/NA	Solid	8021B	3834
MB 885-3888/1-A	Method Blank	Total/NA	Solid	8021B	3888
LCS 885-3888/3-A	Lab Control Sample	Total/NA	Solid	8021B	3888

QC Association Summary

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

GC Semi VOA

Prep Batch: 3963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3394-1	HA01 2-2.5'	Total/NA	Solid	SHAKE	
885-3394-2	HA01 4'	Total/NA	Solid	SHAKE	
885-3394-3	HA02 2-2.5'	Total/NA	Solid	SHAKE	
885-3394-4	HA02 3'	Total/NA	Solid	SHAKE	
885-3394-5	HA03 2'	Total/NA	Solid	SHAKE	
885-3394-6	HA03 3'	Total/NA	Solid	SHAKE	
885-3394-7	HA04 2'	Total/NA	Solid	SHAKE	
885-3394-8	HA04 3'	Total/NA	Solid	SHAKE	
885-3394-9	HA05 2.5'	Total/NA	Solid	SHAKE	
885-3394-10	HA05 4.5'	Total/NA	Solid	SHAKE	
MB 885-3963/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-3963/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-3394-10 MS	HA05 4.5'	Total/NA	Solid	SHAKE	
885-3394-10 MSD	HA05 4.5'	Total/NA	Solid	SHAKE	

Analysis Batch: 4042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3394-10	HA05 4.5'	Total/NA	Solid	8015D	3963
MB 885-3963/1-A	Method Blank	Total/NA	Solid	8015D	3963
LCS 885-3963/2-A	Lab Control Sample	Total/NA	Solid	8015D	3963
885-3394-10 MS	HA05 4.5'	Total/NA	Solid	8015D	3963
885-3394-10 MSD	HA05 4.5'	Total/NA	Solid	8015D	3963

Analysis Batch: 4165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3394-1	HA01 2-2.5'	Total/NA	Solid	8015D	3963
885-3394-2	HA01 4'	Total/NA	Solid	8015D	3963
885-3394-3	HA02 2-2.5'	Total/NA	Solid	8015D	3963
885-3394-4	HA02 3'	Total/NA	Solid	8015D	3963
885-3394-5	HA03 2'	Total/NA	Solid	8015D	3963
885-3394-6	HA03 3'	Total/NA	Solid	8015D	3963
885-3394-7	HA04 2'	Total/NA	Solid	8015D	3963
885-3394-8	HA04 3'	Total/NA	Solid	8015D	3963
885-3394-9	HA05 2.5'	Total/NA	Solid	8015D	3963

HPLC/IC

Leach Batch: 79680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3394-1	HA01 2-2.5'	Soluble	Solid	DI Leach	
885-3394-2	HA01 4'	Soluble	Solid	DI Leach	
885-3394-3	HA02 2-2.5'	Soluble	Solid	DI Leach	
885-3394-4	HA02 3'	Soluble	Solid	DI Leach	
885-3394-5	HA03 2'	Soluble	Solid	DI Leach	
885-3394-6	HA03 3'	Soluble	Solid	DI Leach	
885-3394-7	HA04 2'	Soluble	Solid	DI Leach	
885-3394-8	HA04 3'	Soluble	Solid	DI Leach	
885-3394-9	HA05 2.5'	Soluble	Solid	DI Leach	
885-3394-10	HA05 4.5'	Soluble	Solid	DI Leach	
MB 880-79680/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-79680/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

QC Association Summary

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

HPLC/IC (Continued)

Leach Batch: 79680 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-79680/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
885-3394-8 MS	HA04 3'	Soluble	Solid	DI Leach	
885-3394-8 MSD	HA04 3'	Soluble	Solid	DI Leach	

Analysis Batch: 79687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-3394-1	HA01 2-2.5'	Soluble	Solid	300.0	79680
885-3394-2	HA01 4'	Soluble	Solid	300.0	79680
885-3394-3	HA02 2-2.5'	Soluble	Solid	300.0	79680
885-3394-4	HA02 3'	Soluble	Solid	300.0	79680
885-3394-5	HA03 2'	Soluble	Solid	300.0	79680
885-3394-6	HA03 3'	Soluble	Solid	300.0	79680
885-3394-7	HA04 2'	Soluble	Solid	300.0	79680
885-3394-8	HA04 3'	Soluble	Solid	300.0	79680
885-3394-9	HA05 2.5'	Soluble	Solid	300.0	79680
885-3394-10	HA05 4.5'	Soluble	Solid	300.0	79680
MB 880-79680/1-A	Method Blank	Soluble	Solid	300.0	79680
LCS 880-79680/2-A	Lab Control Sample	Soluble	Solid	300.0	79680
LCSD 880-79680/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	79680
885-3394-8 MS	HA04 3'	Soluble	Solid	300.0	79680
885-3394-8 MSD	HA04 3'	Soluble	Solid	300.0	79680

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA01 2-2.5'
Lab Sample ID: 885-3394-1
Date Collected: 04/24/24 11:50
Matrix: Solid
Date Received: 04/25/24 06:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		5	4029	RA	EET ALB	04/27/24 01:17
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		5	4030	RA	EET ALB	04/27/24 01:17
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		50	4165	JU	EET ALB	04/30/24 15:33
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 18:16

Client Sample ID: HA01 4'
Lab Sample ID: 885-3394-2
Date Collected: 04/24/24 11:52
Matrix: Solid
Date Received: 04/25/24 06:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 01:39
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 01:39
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		1	4165	JU	EET ALB	04/30/24 16:45
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 18:22

Client Sample ID: HA02 2-2.5'
Lab Sample ID: 885-3394-3
Date Collected: 04/24/24 12:27
Matrix: Solid
Date Received: 04/25/24 06:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 02:01
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 02:01
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		1	4165	JU	EET ALB	04/30/24 17:09
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 18:40

Client Sample ID: HA02 3'
Lab Sample ID: 885-3394-4
Date Collected: 04/24/24 12:25
Matrix: Solid
Date Received: 04/25/24 06:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 02:22

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA02 3'
Date Collected: 04/24/24 12:25
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 02:22
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		1	4165	JU	EET ALB	04/30/24 19:36
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 18:47

Client Sample ID: HA03 2'
Date Collected: 04/24/24 12:55
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 02:44
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 02:44
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		1	4165	JU	EET ALB	04/30/24 20:00
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 18:53

Client Sample ID: HA03 3'
Date Collected: 04/24/24 12:57
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 03:06
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 03:06
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		1	4165	JU	EET ALB	04/30/24 20:24
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 18:59

Client Sample ID: HA04 2'
Date Collected: 04/24/24 14:15
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 03:28
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 03:28

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA04 2'
Date Collected: 04/24/24 14:15
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		1	4165	JU	EET ALB	04/30/24 20:49
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 19:05

Client Sample ID: HA04 3'
Date Collected: 04/24/24 14:17
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 03:50
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 03:50
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		2	4165	JU	EET ALB	04/30/24 15:57
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 19:11

Client Sample ID: HA05 2.5'
Date Collected: 04/24/24 14:19
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 04:33
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 04:33
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		1	4165	JU	EET ALB	04/30/24 21:38
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 19:30

Client Sample ID: HA05 4.5'
Date Collected: 04/24/24 14:21
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8015D		1	4029	RA	EET ALB	04/27/24 04:55
Total/NA	Prep	5030C			3888	JP	EET ALB	04/25/24 12:10
Total/NA	Analysis	8021B		1	4030	RA	EET ALB	04/27/24 04:55
Total/NA	Prep	SHAKE			3963	DH	EET ALB	04/26/24 12:53
Total/NA	Analysis	8015D		1	4042	JU	EET ALB	04/29/24 23:14

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Client Sample ID: HA05 4.5'
Date Collected: 04/24/24 14:21
Date Received: 04/25/24 06:45

Lab Sample ID: 885-3394-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Soluble	Leach	DI Leach			79680	SA	EET MID	04/30/24 15:04
Soluble	Analysis	300.0		1	79687	SMC	EET MID	04/30/24 19:36

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

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

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Sunray G 1A

Job ID: 885-3394-1

Laboratory: Eurofins Albuquerque

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

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

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

Analysis Method	Prep Method	Matrix	Analyte
8015D	5030C	Solid	Gasoline Range Organics [C6 - C10]
8015D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5030C	Solid	Benzene
8021B	5030C	Solid	Ethylbenzene
8021B	5030C	Solid	Toluene
8021B	5030C	Solid	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

Laboratory: Eurofins Midland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Chain-of-Custody Record

Client: HEC

Attn: Kate Kaufman

Mailing Address:

Phone #:

email or Fax#: KKaufman@Hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☑ Standard 5day ☐ Rush

Project Name: Sunray G 1A

Project #:

Project Manager: Stuart Hyde

Shyde@ensolum.com

Sampler: PA

On Ice: ☑ Yes ☐ No 4oz

# of Coolers: 1

Cooler Temp(including CF): 4.6-0.1=4.5 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

885-3394 COC

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4/24/24	1150	Soil	HA01 - 2-2.5'	4oz	Cool	1	X	X					X			
	1152		HA01 4'			2										
	1227		HA02 2-2.5'			3										
	1225		HA02 3'			4										
	1255		HA03 2'			5										
	1257		HA03 3'			6										
	1415		HA04 2'			7										
	1417		HA04 3'			8										
	1419		HA05 2.5'			9										
↓	1421	↓	HA05 4.5'	↓	↓	10	↓	↓					↓			
			per client rmc 4/25/24													

Date	Time	Relinquished by	Received by	Via	Date	Time
4/24/24	1540		Chad Waela		4/24/24	1540
4/24/24	1800	Chad Waela		courier	4/25/24	6:45

Remarks: PLZ CC: Shyde Panderson@Ensolum.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories This serves as notice of this possibility Any sub-contracted data will be clearly notated on the analytical report.

Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-3394-1

Login Number: 3394 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: Casarrubias, Tracy

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

Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-3394-1

Login Number: 3394
List Number: 2
Creator: Vasquez, Julisa

List Source: Eurofins Midland
List Creation: 04/30/24 10:54 AM

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kate Kaufman
Hilcorp Energy
PO BOX 4700
Farmington, New Mexico 87499

Generated 6/17/2024 5:03:42 PM

JOB DESCRIPTION

Sunray G1A

JOB NUMBER

885-6274-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization

Generated
6/17/2024 5:03:42 PM

Authorized for release by
Andy Freeman, Business Unit Manager
andy.freeman@et.eurofinsus.com
(505)345-3975

Client: Hilcorp Energy
Project/Site: Sunray G1A

Laboratory Job ID: 885-6274-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

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

Case Narrative

Client: Hilcorp Energy
Project: Sunray G1A

Job ID: 885-6274-1

Job ID: 885-6274-1 Eurofins Albuquerque

Job Narrative
885-6274-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 6/14/2024 7:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C.

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

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

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

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

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Client Sample ID: FS01

Date Collected: 06/13/24 12:00
Date Received: 06/14/24 07:00

Lab Sample ID: 885-6274-1

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		1.9		mg/Kg		06/14/24 09:08	06/14/24 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*35 - 166*	*06/14/24 09:08*	*06/14/24 16:02*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0096		mg/Kg		06/14/24 09:08	06/14/24 16:02	1
Ethylbenzene	ND		0.019		mg/Kg		06/14/24 09:08	06/14/24 16:02	1
Toluene	ND		0.019		mg/Kg		06/14/24 09:08	06/14/24 16:02	1
Xylenes, Total	ND		0.038		mg/Kg		06/14/24 09:08	06/14/24 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*48 - 145*	*06/14/24 09:08*	*06/14/24 16:02*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**61**		9.7		mg/Kg		06/14/24 08:39	06/14/24 13:55	1
Motor Oil Range Organics [C28-C40]	**99**		48		mg/Kg		06/14/24 08:39	06/14/24 13:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*	*06/14/24 08:39*	*06/14/24 13:55*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		06/14/24 09:56	06/14/24 18:00	20

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Client Sample ID: FS02

Date Collected: 06/13/24 12:05
Date Received: 06/14/24 07:00

Lab Sample ID: 885-6274-2

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		1.8		mg/Kg		06/14/24 09:08	06/14/24 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*35 - 166*	*06/14/24 09:08*	*06/14/24 16:26*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0089		mg/Kg		06/14/24 09:08	06/14/24 16:26	1
Ethylbenzene	ND		0.018		mg/Kg		06/14/24 09:08	06/14/24 16:26	1
Toluene	ND		0.018		mg/Kg		06/14/24 09:08	06/14/24 16:26	1
Xylenes, Total	ND		0.036		mg/Kg		06/14/24 09:08	06/14/24 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*48 - 145*	*06/14/24 09:08*	*06/14/24 16:26*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**59**		9.2		mg/Kg		06/14/24 08:39	06/14/24 16:28	1
Motor Oil Range Organics [C28-C40]	ND		46		mg/Kg		06/14/24 08:39	06/14/24 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*102*		*62 - 134*	*06/14/24 08:39*	*06/14/24 16:28*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		06/14/24 09:56	06/14/24 18:12	20

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Client Sample ID: SW01

Date Collected: 06/13/24 12:10
Date Received: 06/14/24 07:00

Lab Sample ID: 885-6274-3

Matrix: Solid

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		1.7		mg/Kg		06/14/24 09:08	06/14/24 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*35 - 166*	*06/14/24 09:08*	*06/14/24 16:49*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0085		mg/Kg		06/14/24 09:08	06/14/24 16:49	1
Ethylbenzene	ND		0.017		mg/Kg		06/14/24 09:08	06/14/24 16:49	1
Toluene	ND		0.017		mg/Kg		06/14/24 09:08	06/14/24 16:49	1
Xylenes, Total	ND		0.034		mg/Kg		06/14/24 09:08	06/14/24 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*48 - 145*	*06/14/24 09:08*	*06/14/24 16:49*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**90**		9.0		mg/Kg		06/14/24 08:39	06/14/24 14:17	1
Motor Oil Range Organics [C28-C40]	**130**		45		mg/Kg		06/14/24 08:39	06/14/24 14:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*114*		*62 - 134*	*06/14/24 08:39*	*06/14/24 14:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		06/14/24 09:56	06/14/24 18:24	20

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Client Sample ID: SW02

Lab Sample ID: 885-6274-4

Date Collected: 06/13/24 12:15
Matrix: Solid
Date Received: 06/14/24 07:00

Method: SW846 8015M/D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		1.9		mg/Kg		06/14/24 09:08	06/14/24 17:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*35 - 166*	*06/14/24 09:08*	*06/14/24 17:12*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0094		mg/Kg		06/14/24 09:08	06/14/24 17:12	1
Ethylbenzene	ND		0.019		mg/Kg		06/14/24 09:08	06/14/24 17:12	1
Toluene	ND		0.019		mg/Kg		06/14/24 09:08	06/14/24 17:12	1
Xylenes, Total	ND		0.038		mg/Kg		06/14/24 09:08	06/14/24 17:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*48 - 145*	*06/14/24 09:08*	*06/14/24 17:12*	*1*

Method: SW846 8015M/D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**22**		8.7		mg/Kg		06/14/24 08:39	06/14/24 14:28	1
Motor Oil Range Organics [C28-C40]	ND		43		mg/Kg		06/14/24 08:39	06/14/24 14:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*101*		*62 - 134*	*06/14/24 08:39*	*06/14/24 14:28*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		60		mg/Kg		06/14/24 09:56	06/14/24 18:37	20

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Method: 8015M/D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-6726/1-A
Matrix: Solid
Analysis Batch: 6779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 6726

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		06/14/24 09:08	06/14/24 10:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*35 - 166*	*06/14/24 09:08*	*06/14/24 10:59*	*1*

Lab Sample ID: LCS 885-6726/2-A
Matrix: Solid
Analysis Batch: 6779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 6726

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			25.0	23.4		mg/Kg		94	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*194*	*S1+*	*35 - 166*

Lab Sample ID: 885-6274-1 MS
Matrix: Solid
Analysis Batch: 6779

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 6726

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]	ND		9.57	9.88		mg/Kg		103	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*204*	*S1+*	*35 - 166*

Lab Sample ID: 885-6274-1 MSD
Matrix: Solid
Analysis Batch: 6779

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 6726

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics [C6 - C10]	ND		9.57	9.37		mg/Kg		98	70 - 130	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*195*	*S1+*	*35 - 166*

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-6726/1-A
Matrix: Solid
Analysis Batch: 6780

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 6726

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		06/14/24 09:08	06/14/24 10:59	1
Ethylbenzene	ND		0.050		mg/Kg		06/14/24 09:08	06/14/24 10:59	1
Toluene	ND		0.050		mg/Kg		06/14/24 09:08	06/14/24 10:59	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

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

Lab Sample ID: MB 885-6726/1-A
Matrix: Solid
Analysis Batch: 6780

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 6726

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		0.10		mg/Kg		06/14/24 09:08	06/14/24 10:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*48 - 145*	*06/14/24 09:08*	*06/14/24 10:59*	*1*

Lab Sample ID: LCS 885-6726/3-A
Matrix: Solid
Analysis Batch: 6780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 6726

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			1.00	0.896		mg/Kg		90	70 - 130		
Ethylbenzene			1.00	0.850		mg/Kg		85	70 - 130		
m&p-Xylene			2.00	1.73		mg/Kg		87	70 - 130		
o-Xylene			1.00	0.840		mg/Kg		84	70 - 130		
Toluene			1.00	0.842		mg/Kg		84	70 - 130		
Xylenes, Total			3.00	2.57		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*48 - 145*

Lab Sample ID: 885-6274-2 MS
Matrix: Solid
Analysis Batch: 6780

Client Sample ID: FS02
Prep Type: Total/NA
Prep Batch: 6726

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	ND		0.358	0.317		mg/Kg		89	70 - 130		
Ethylbenzene	ND		0.358	0.300		mg/Kg		84	70 - 130		
m&p-Xylene	ND		0.715	0.609		mg/Kg		84	70 - 130		
o-Xylene	ND		0.358	0.296		mg/Kg		83	70 - 130		
Toluene	ND		0.358	0.300		mg/Kg		83	70 - 130		
Xylenes, Total	ND		1.07	0.905		mg/Kg		84	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*48 - 145*

Lab Sample ID: 885-6274-2 MSD
Matrix: Solid
Analysis Batch: 6780

Client Sample ID: FS02
Prep Type: Total/NA
Prep Batch: 6726

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		0.358	0.316		mg/Kg		88	70 - 130	0	20
Ethylbenzene	ND		0.358	0.302		mg/Kg		85	70 - 130	1	20
m&p-Xylene	ND		0.715	0.609		mg/Kg		84	70 - 130	0	20
o-Xylene	ND		0.358	0.297		mg/Kg		83	70 - 130	1	20
Toluene	ND		0.358	0.300		mg/Kg		83	70 - 130	0	20
Xylenes, Total	ND		1.07	0.907		mg/Kg		84	70 - 130	0	20

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

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

Lab Sample ID: 885-6274-2 MSD
Matrix: Solid
Analysis Batch: 6780

Client Sample ID: FS02
Prep Type: Total/NA
Prep Batch: 6726

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*91*		*48 - 145*

Method: 8015M/D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-6723/1-A
Matrix: Solid
Analysis Batch: 6727

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 6723

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		06/14/24 08:39	06/14/24 10:43	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		06/14/24 08:39	06/14/24 10:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate (Surr)	*99*		*62 - 134*	*06/14/24 08:39*	*06/14/24 10:43*	*1*

Lab Sample ID: LCS 885-6723/2-A
Matrix: Solid
Analysis Batch: 6727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 6723

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]			50.0	47.4		mg/Kg		95	60 - 135		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Di-n-octyl phthalate (Surr)	*94*		*62 - 134*

Lab Sample ID: 885-6274-4 MS
Matrix: Solid
Analysis Batch: 6727

Client Sample ID: SW02
Prep Type: Total/NA
Prep Batch: 6723

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]	22		43.4	50.4		mg/Kg		65	44 - 136		

Surrogate	MS %Recovery	MS Qualifier	Limits
Di-n-octyl phthalate (Surr)	*101*		*62 - 134*

Lab Sample ID: 885-6274-4 MSD
Matrix: Solid
Analysis Batch: 6727

Client Sample ID: SW02
Prep Type: Total/NA
Prep Batch: 6723

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	22		47.2	56.5		mg/Kg		73	44 - 136	11	32

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Di-n-octyl phthalate (Surr)	*117*		*62 - 134*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 885-6732/1-A
Matrix: Solid
Analysis Batch: 6784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 6732

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5		mg/Kg		06/14/24 09:56	06/14/24 12:39	1

Lab Sample ID: LCS 885-6732/2-A
Matrix: Solid
Analysis Batch: 6784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 6732

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			15.0	14.8		mg/Kg		98	90 - 110		

QC Association Summary

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

GC VOA

Prep Batch: 6726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6274-1	FS01	Total/NA	Solid	5035	
885-6274-2	FS02	Total/NA	Solid	5035	
885-6274-3	SW01	Total/NA	Solid	5035	
885-6274-4	SW02	Total/NA	Solid	5035	
MB 885-6726/1-A	Method Blank	Total/NA	Solid	5035	
LCS 885-6726/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 885-6726/3-A	Lab Control Sample	Total/NA	Solid	5035	
885-6274-1 MS	FS01	Total/NA	Solid	5035	
885-6274-1 MSD	FS01	Total/NA	Solid	5035	
885-6274-2 MS	FS02	Total/NA	Solid	5035	
885-6274-2 MSD	FS02	Total/NA	Solid	5035	

Analysis Batch: 6779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6274-1	FS01	Total/NA	Solid	8015M/D	6726
885-6274-2	FS02	Total/NA	Solid	8015M/D	6726
885-6274-3	SW01	Total/NA	Solid	8015M/D	6726
885-6274-4	SW02	Total/NA	Solid	8015M/D	6726
MB 885-6726/1-A	Method Blank	Total/NA	Solid	8015M/D	6726
LCS 885-6726/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6726
885-6274-1 MS	FS01	Total/NA	Solid	8015M/D	6726
885-6274-1 MSD	FS01	Total/NA	Solid	8015M/D	6726

Analysis Batch: 6780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6274-1	FS01	Total/NA	Solid	8021B	6726
885-6274-2	FS02	Total/NA	Solid	8021B	6726
885-6274-3	SW01	Total/NA	Solid	8021B	6726
885-6274-4	SW02	Total/NA	Solid	8021B	6726
MB 885-6726/1-A	Method Blank	Total/NA	Solid	8021B	6726
LCS 885-6726/3-A	Lab Control Sample	Total/NA	Solid	8021B	6726
885-6274-2 MS	FS02	Total/NA	Solid	8021B	6726
885-6274-2 MSD	FS02	Total/NA	Solid	8021B	6726

GC Semi VOA

Prep Batch: 6723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6274-1	FS01	Total/NA	Solid	SHAKE	
885-6274-2	FS02	Total/NA	Solid	SHAKE	
885-6274-3	SW01	Total/NA	Solid	SHAKE	
885-6274-4	SW02	Total/NA	Solid	SHAKE	
MB 885-6723/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-6723/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
885-6274-4 MS	SW02	Total/NA	Solid	SHAKE	
885-6274-4 MSD	SW02	Total/NA	Solid	SHAKE	

Analysis Batch: 6727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6274-1	FS01	Total/NA	Solid	8015M/D	6723
885-6274-2	FS02	Total/NA	Solid	8015M/D	6723

QC Association Summary

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

GC Semi VOA (Continued)

Analysis Batch: 6727 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6274-3	SW01	Total/NA	Solid	8015M/D	6723
885-6274-4	SW02	Total/NA	Solid	8015M/D	6723
MB 885-6723/1-A	Method Blank	Total/NA	Solid	8015M/D	6723
LCS 885-6723/2-A	Lab Control Sample	Total/NA	Solid	8015M/D	6723
885-6274-4 MS	SW02	Total/NA	Solid	8015M/D	6723
885-6274-4 MSD	SW02	Total/NA	Solid	8015M/D	6723

HPLC/IC

Prep Batch: 6732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6274-1	FS01	Total/NA	Solid	300_Prep	
885-6274-2	FS02	Total/NA	Solid	300_Prep	
885-6274-3	SW01	Total/NA	Solid	300_Prep	
885-6274-4	SW02	Total/NA	Solid	300_Prep	
MB 885-6732/1-A	Method Blank	Total/NA	Solid	300_Prep	
LCS 885-6732/2-A	Lab Control Sample	Total/NA	Solid	300_Prep	

Analysis Batch: 6784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6274-1	FS01	Total/NA	Solid	300.0	6732
885-6274-2	FS02	Total/NA	Solid	300.0	6732
885-6274-3	SW01	Total/NA	Solid	300.0	6732
885-6274-4	SW02	Total/NA	Solid	300.0	6732
MB 885-6732/1-A	Method Blank	Total/NA	Solid	300.0	6732
LCS 885-6732/2-A	Lab Control Sample	Total/NA	Solid	300.0	6732

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Client Sample ID: FS01

Lab Sample ID: 885-6274-1
Matrix: Solid
Date Collected: 06/13/24 12:00
Date Received: 06/14/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			6726	AT	EET ALB	06/14/24 09:08
Total/NA	Analysis	8015M/D		1	6779	JP	EET ALB	06/14/24 16:02
Total/NA	Prep	5035			6726	AT	EET ALB	06/14/24 09:08
Total/NA	Analysis	8021B		1	6780	JP	EET ALB	06/14/24 16:02
Total/NA	Prep	SHAKE			6723	JU	EET ALB	06/14/24 08:39
Total/NA	Analysis	8015M/D		1	6727	PD	EET ALB	06/14/24 13:55
Total/NA	Prep	300_Prep			6732	RC	EET ALB	06/14/24 09:56
Total/NA	Analysis	300.0		20	6784	RC	EET ALB	06/14/24 18:00

Client Sample ID: FS02

Lab Sample ID: 885-6274-2
Matrix: Solid
Date Collected: 06/13/24 12:05
Date Received: 06/14/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			6726	AT	EET ALB	06/14/24 09:08
Total/NA	Analysis	8015M/D		1	6779	JP	EET ALB	06/14/24 16:26
Total/NA	Prep	5035			6726	AT	EET ALB	06/14/24 09:08
Total/NA	Analysis	8021B		1	6780	JP	EET ALB	06/14/24 16:26
Total/NA	Prep	SHAKE			6723	JU	EET ALB	06/14/24 08:39
Total/NA	Analysis	8015M/D		1	6727	PD	EET ALB	06/14/24 16:28
Total/NA	Prep	300_Prep			6732	RC	EET ALB	06/14/24 09:56
Total/NA	Analysis	300.0		20	6784	RC	EET ALB	06/14/24 18:12

Client Sample ID: SW01

Lab Sample ID: 885-6274-3
Matrix: Solid
Date Collected: 06/13/24 12:10
Date Received: 06/14/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			6726	AT	EET ALB	06/14/24 09:08
Total/NA	Analysis	8015M/D		1	6779	JP	EET ALB	06/14/24 16:49
Total/NA	Prep	5035			6726	AT	EET ALB	06/14/24 09:08
Total/NA	Analysis	8021B		1	6780	JP	EET ALB	06/14/24 16:49
Total/NA	Prep	SHAKE			6723	JU	EET ALB	06/14/24 08:39
Total/NA	Analysis	8015M/D		1	6727	PD	EET ALB	06/14/24 14:17
Total/NA	Prep	300_Prep			6732	RC	EET ALB	06/14/24 09:56
Total/NA	Analysis	300.0		20	6784	RC	EET ALB	06/14/24 18:24

Client Sample ID: SW02

Lab Sample ID: 885-6274-4
Matrix: Solid
Date Collected: 06/13/24 12:15
Date Received: 06/14/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			6726	AT	EET ALB	06/14/24 09:08
Total/NA	Analysis	8015M/D		1	6779	JP	EET ALB	06/14/24 17:12

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Client Sample ID: SW02

Date Collected: 06/13/24 12:15
Date Received: 06/14/24 07:00

Lab Sample ID: 885-6274-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			6726	AT	EET ALB	06/14/24 09:08
Total/NA	Analysis	8021B		1	6780	JP	EET ALB	06/14/24 17:12
Total/NA	Prep	SHAKE			6723	JU	EET ALB	06/14/24 08:39
Total/NA	Analysis	8015M/D		1	6727	PD	EET ALB	06/14/24 14:28
Total/NA	Prep	300_Prep			6732	RC	EET ALB	06/14/24 09:56
Total/NA	Analysis	300.0		20	6784	RC	EET ALB	06/14/24 18:37

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Sunray G1A

Job ID: 885-6274-1

Laboratory: Eurofins Albuquerque

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

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

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

Analysis Method	Prep Method	Matrix	Analyte
300.0	300_Prep	Solid	Chloride
8015M/D	5035	Solid	Gasoline Range Organics [C6 - C10]
8015M/D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015M/D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5035	Solid	Benzene
8021B	5035	Solid	Ethylbenzene
8021B	5035	Solid	Toluene
8021B	5035	Solid	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

Chain-of-Custody Record

Client: Hilcorp
Kate Kaufman
Mailing Address: 1111 Travis St
Houston
Phone #:
email or Fax#: KKaufman@hilcorp
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☒ EDD (Type)

Turn-Around Time:
SH
~~Standard~~ ☒ Rush Next Day
Project Name:
Sunray G 1A
Project #:
Project Manager:
Stuart Hyde
shyde@ensolum
Sampler: S Hyde
On Ice: ☒ Yes ☐ No Vogi
# of Coolers: 1
Cooler Temp(including CF): 4.5-0.1=4.4 (°C)

HALL ENVIRONMENTAL ANALYSIS LABOR
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 8710
Tel. 505-345-3975 Fax 505-345-4107
885-6274 COC

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D GRO / DRO / MRO	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO3, NO2, PO4, SO4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6/13	1200	Soil	FS01	4oz jar	Cool	1	X	X					X			
"	1205	"	FS02	"	"	2	X	X					X			
"	1210	"	SW01	"	"	3	X	X					X			
"	1215	"	SW02	"	"	4	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
6/13/24	1326				6/13/24	1326
6/13/24	1719			courier	6/14/24	7:00

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-6274-1

Login Number: 6274 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: Casarrubias, Tracy

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

ENSOLUM

APPENDIX D

Photographic Log

ENSOLUM

Photographic Log
Hilcorp Energy Company
Sunray G #1A
36.886647°, -107.790895°

Photograph: 1 Date: 4/11/2024
Description: BGT and surrounding area prior to vacuum truck extraction
View: West

Photograph: 2 Date: 4/24/2024
Description: BGT and surrounding area after vacuum truck remediation
View: Southeast

Photograph: 3 Date: 4/24/2024
Description: Soil staining within BGT berm
View: Northwest

Photograph: 4 Date: 4/24/2024
Description: HA01 in impacted soil
View: South

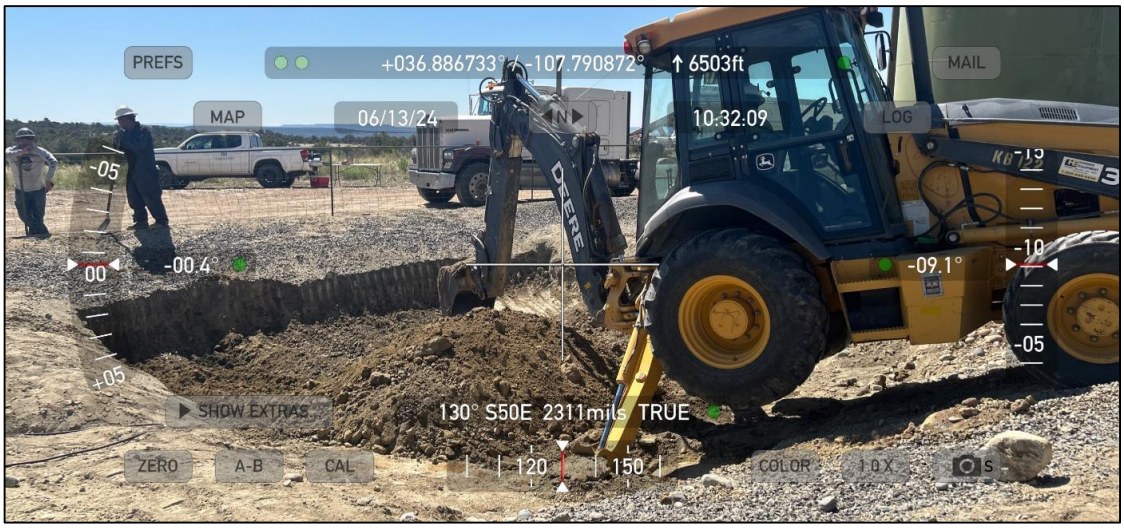
Photograph: 5 Date: 4/24/2024
Description: HA02 on edge of containment
View: East

Photograph: 6 Date: 4/24/2024
Description: HA03 on edge of containment
View: Southeast

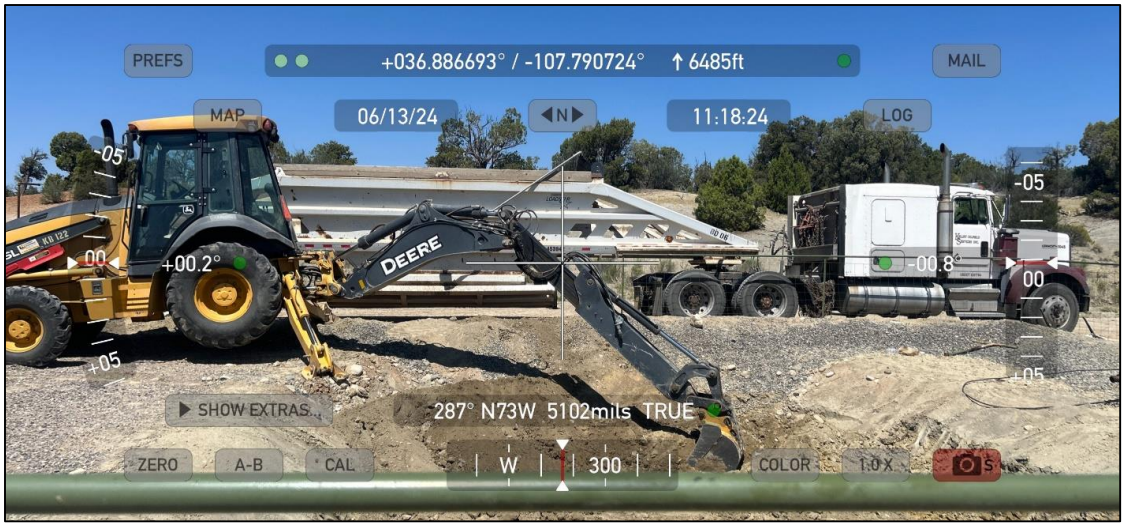
Photograph: 7 Date: 4/24/2024
Description: HA04 on edge of cellar
View: Northwest

Photograph: 8 Date: 4/24/2024
Description: HA05 on edge of cellar
View: Northwest

Photograph: 9 Date: 6/13/2024
Description: BGT footprint after removal
View: West



Photograph: 10 Date: 6/13/2024
Description: Excavation activities
View: Southeast



Photograph: 11 Date: 6/13/2024
Description: Excavation activities and disposal of spoils
View: West

Photograph: 12 Date: 6/13/2024
Description: Final Excavation extents
View: East

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1625 N. French Dr., Hobbs, NM 88240
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1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 360539

QUESTIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 360539
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2410829165**
Incident Name	**NAPP2410829165 SUNRAY G #1A @ 30-045-22815**
Incident Type	**Oil Release**
Incident Status	**Remediation Closure Report Received**
Incident Well	**[30-045-22815] SUNRAY G #001A**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	Sunray G #1A
Date Release Discovered	04/11/2024
Surface Owner	Federal

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

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Equipment Failure | Pit (Specify) | Crude Oil | Released: 17 BBL | Recovered: 15 BBL | Lost: 2 BBL.
Produced Water Released (bbls) Details	*Not answered.*
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 360539
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**No**
Reasons why this would be considered a submission for a notification of a major release	*Unavailable.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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

I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 07/02/2024

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 360539
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 300 and 500 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 300 and 500 (ft.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	None
A 100-year floodplain	Between 1000 (ft.) and ½ (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	37
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	20849
GRO+DRO (EPA SW-846 Method 8015M)	14049
BTEX (EPA SW-846 Method 8021B or 8260B)	2.4
Benzene (EPA SW-846 Method 8021B or 8260B)	0.1
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	04/11/2024
On what date will (or did) the final sampling or liner inspection occur	06/13/2024
On what date will (or was) the remediation complete(d)	06/13/2024
What is the estimated surface area (in square feet) that will be reclaimed	0
What is the estimated volume (in cubic yards) that will be reclaimed	0
What is the estimated surface area (in square feet) that will be remediated	760
What is the estimated volume (in cubic yards) that will be remediated	66.7
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 360539
	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 **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	ENVIROTECH LANDFARM #2 [fEEM0112336756]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 07/02/2024
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 360539
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

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

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 360539
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**352775**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**06/13/2024**
What was the (estimated) number of samples that were to be gathered	**10**
What was the sampling surface area in square feet	**1000**

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	760
What was the total volume (cubic yards) remediated	66.7
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	NA

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: Stuart Hyde Title: Senior Geologist Email: shyde@ensolum.com Date: 07/02/2024

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QUESTIONS (continued)

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 360539
	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 360539

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 360539
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation closure approved.	7/31/2024
amaxwell	A reclamation report will not be accepted until reclamation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	7/31/2024
amaxwell	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	7/31/2024