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April 15, 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: First Quarter 2024 – SVE System Update
Sunray B 1B
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident No: nAPP2212649502

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *First Quarter 2024 –SVE System Update* report summarizing the soil vapor extraction (SVE) system performance at the Sunray B 1B natural gas production well (Site) on land managed by the Bureau of Land Management (BLM) in Unit F, Section 15, Township 30 North, Range 10 West in San Juan County, New Mexico (Figure 1). After a temporary startup on August 29, 2023, followed by a month long shut down, the SVE system was put into full time operation on September 29, 2023, to remediate subsurface soil impacts resulting from a release of approximately 14 barrels (bbls) of natural gas condensate and 7 bbls of produced water. This report summarizes Site activities performed in January, February, and March of 2024.

SVE SYSTEM SPECIFICATIONS

The SVE system at the Site consists of a 3-phase, 5 horsepower Howden Roots 32 URAI rotary lobe blower capable of producing 112 cubic feet per minute (cfm) flow at 82 inches of water column (IWC) vacuum. The system is powered by a permanent power drop and is intended to run 24 hours per day. Three SVE wells are currently in operation and are shown on Figure 2. SVE wells SVE01, SVE02, and SVE03 are screened at varying depths up to 25 feet below ground surface (bgs) to address residual soil impacts in the unsaturated zone.

FIRST QUARTER 2024 ACTIVITIES

The initial startup of the Site SVE system was performed on August 29 and 30, 2023. Based on the New Mexico Oil Conservation Division (NMOCD) Conditions of Approval (COAs), dated February 10, 2023, field data measurements were collected from the system and included the following parameters: total system flow, estimated flow rates from each SVE well, photoionization detector (PID) measurements of volatile organic compounds (VOCs) from each SVE well, vacuum measurements from each SVE well, and oxygen/carbon dioxide measurements via hand-held analyzers from each SVE well. Field visits were conducted bi-weekly throughout the first quarter 2024. Field parameters noted above were collected during each visit. Field notes taken during operations and maintenance (O&M) visits are presented in Appendix A Throughout first quarter 2024, vacuum extraction was performed on all Site SVE wells in order to induce flow in impacted soil zones. Between December 28, 2023, and March 21, 2024, the SVE system operated for 2,004.0 hours for a runtime efficiency of 99 percent (%). Appendix B presents

photographs of the runtime meter for calculating the first quarter 2024 runtime efficiency. Table 1 presents the SVE system operational hours and calculated percentage runtime.

Based on the February 2023 COAs, emission samples were collected from a sample port located between the SVE piping manifold and the SVE blower using a high vacuum air sampler. Prior to collection, the emission sample was field screened with a PID for organic vapor monitoring (OVM). The emission sample was collected directly into two 1-Liter Tedlar® bags and submitted to Hall Environmental Analysis Laboratory (now Eurofins Environment Testing) in Albuquerque, New Mexico for analysis of total volatile petroleum hydrocarbons (TVPH – also known as total petroleum hydrocarbons – gasoline range organics (TPH-GRO)) following United States Environmental Protection Agency (EPA) Method 8015D, VOCs following EPA Method 8260B, and fixed gas analysis of oxygen and carbon dioxide following Gas Processors Association (GPA) Method 2261. Emission samples were collected bi-weekly (once every two weeks) through the end of the fourth quarter of 2023 and bi-monthly (once every two months) throughout the first quarter of 2024. A summary of field measurements and analytical data collected between December 2023 and March 2024 are presented in Tables 2 and 3, respectively. Note: analytical data from the last two fourth quarter 2024 sampling events conducted on December 13 and December 28, 2023, were not received from the laboratory prior to the previous report submittal; this data is included in this report. Full laboratory analytical reports are attached as Appendix C. Oxygen and carbon dioxide levels over time are presented in Graphs 1 and 2, respectively.

Air emission sample data and measured influent flow rates are used to estimate total mass recovered and total emissions generated by the SVE system (Table 4). Based on these estimates, 1,741 pounds (0.87 tons) of TVPH have been removed by the system to date between system startup and March 6, 2024.

DISCUSSION AND RECOMMENDATIONS

Per the discussion in the *Fourth Quarter 2023 – SVE System Update*, accurate flow measurements at extraction well SVE03 could not be collected throughout the fourth quarter of 2023 due to the rotometer being undersized. On February 2, 2024, Ensolum installed dedicated pitot tubes to more accurately record the flow rate from each individual extraction well.

A decrease in mass removal rates was observed during the first quarter of system operation, as is expected following initial startup. Following a deep freeze in December 2023, the blower motor speed was decreased using the variable frequency drive in order to minimize the amount of water and condensation accumulation within the aboveground piping. A notable drop in mass removal coincided with the decreased motor speed and associated drop in applied vacuum at the Site, as shown in the laboratory analytical results from December 28, 2023, January 19, 2024, and March 6, 2024. Following the last anticipated freeze of the season, the motor speed will be increased in order to enhance the applied vacuum and extend the radius of influence around the extraction wells.

Bi-weekly O&M visits and bi-monthly (every other month) sampling events will continue to be performed by Ensolum and/or Hilcorp personnel to ensure the SVE system is operating within normal working ranges (i.e., temperature, pressure, and vacuum). Deviations from regular operations will be noted on field logs and included in the following quarterly report.

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

Sincerely,

Ensolum, LLC

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Attachments:

Figure 1	Site Location Map
Figure 2	SVE System Radius of Influence and Radius of Effect
Table 1	Soil Vapor Extraction System Runtime Calculations
Table 2	Soil Vapor Extraction System Field Measurements
Table 3	Soil Vapor Extraction System Air Analytical Results
Table 4	Soil Vapor Extraction System Mass Removal and Emissions
Graph 1	Oxygen vs Time
Graph 2	Carbon Dioxide vs Time
Appendix A	Field Notes
Appendix B	Project Photographs
Appendix C	Laboratory Analytical Reports

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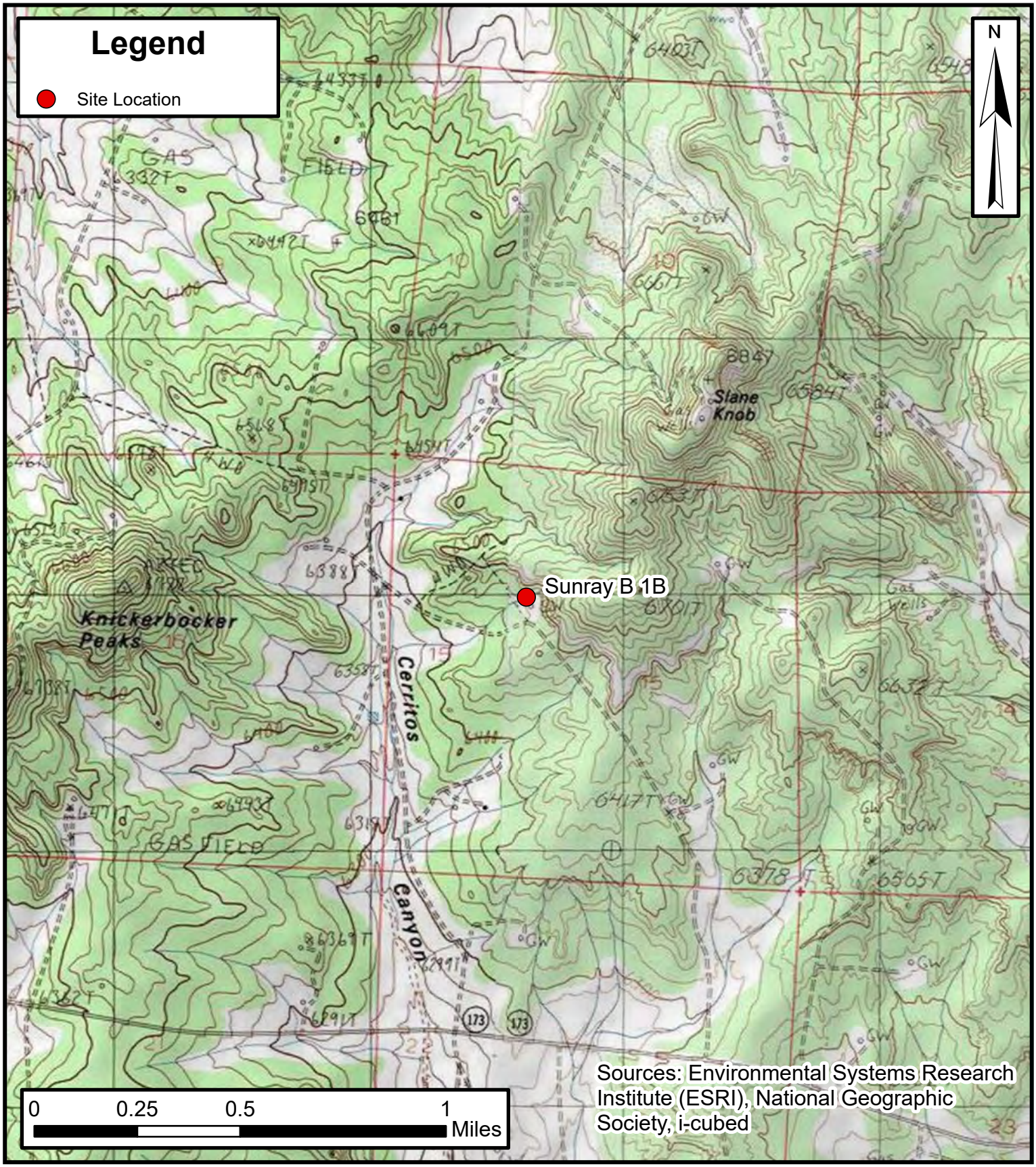
Figures



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Site Location Map

Sunray B 1B
Hilcorp Energy Company

36.8147621, -107.8746643
San Juan County, New Mexico

FIGURE
1

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SVE System Radius of Influence and Radius of Effect

Sunray B 1B
Hilcorp Energy Company
36.8147621, -107.8746643
San Juan County, New Mexico

FIGURE
2

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Tables & Graphs

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TABLE 1
SOIL VAPOR EXTRACTION SYSTEM RUNTIME CALCULATIONS
Sunray B 1B
Hilcorp Energy Company
San Juan County, New Mexico

Date	Total Operational Hours	Delta Hours	Days	Quarterly Percent Runtime	Cumulative Percent Runtime
9/29/2023	126.8	Startup			
12/28/2023	2,181.4	2,054.6	90	95%	95%
3/21/2024	4,185.4	2,004.0	84	99%	97%

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TABLE 2
SOIL VAPOR EXTRACTION SYSTEM FIELD MEASUREMENTS
Sunray B 1B
Hilcorp Energy Company
San Juan County, New Mexico

SVE Well ID	Date	PID (ppm)	Differential Pressure (IWC)	Flow Rate (acfm)	Flow Rate (scfm)[1][2]	Vacuum (IWC)	Oxygen (%)	Carbon Dioxide (%)
Influent, All Wells	8/29/2023	788	2.7	144	92	74.8	--	--
	8/30/2023	1,826	--	--	--	68.0	20.9	0.62
	9/29/2023	538	3.0	151	99	68.0	20.9	0.26
	10/6/2023	431	3.0	151	101	60.5	20.9	0.00
	10/12/2023	356	5.3	201	127	80.0	20.9	0.00
	10/19/2023	399	5.7	209	131	81.0	20.9	0.10
	10/26/2023	165	6.5	223	146	68.0	20.9	0.10
	10/31/2023	278	5.6	207	134	72.1	--	--
	11/16/2023	378	6.9	230	153	61.2	--	--
	11/28/2023	147	7.2	235	156	61.2	--	--
	12/7/2023	205	7.0	231	157	54.4	19.6	0.02
	12/13/2023	165	6.9	230	153	61.2	19.3	0.02
	12/20/2023	182	7.1	233	155	61.2	--	--
	12/28/2023	39	4.8	192	135	40.8	--	--
	1/19/2024	59	3.8	170	118	46.9	20.9	0.06
	2/2/2024	143	3.7	167	116	47.6	20.9	0.02
	2/14/2024	329	3.4	161	111	51.0	--	--
	2/23/2024	204	3.5	164	128	51.0	--	--
	3/6/2024	101	3.3	159	125	47.6	--	--
	3/21/2024	86	3.5	164	129	42.5	--	--
SVE01	8/29/2023	2,789	--	--	16	78.9	--	--
	8/30/2023	3,588	--	--	20	--	20.9	0.62
	9/29/2023	1,312	--	--	10	76.2	20.9	0.18
	10/6/2023	1,429	--	--	10	66.0	20.9	--
	10/12/2023	2,450	--	--	9	76.0	20.9	0.18
	10/19/2023	672	--	--	10	70.0	20.9	0.08
	10/26/2023	420	--	--	10	68.0	20.9	0.08
	10/31/2023	348	--	--	--	72.1	20.9	0.02
	11/16/2023	688	--	--	8	78.9	19.8	0.06
	11/28/2023	453	--	--	8	62.6	20.2	0.04
	12/7/2023	430	--	--	8	58.0	19.6	0.02
	12/13/2023	405	--	--	10	59.8	19.3	0.02
	12/20/2023	--	--	--	12	59.8	--	--
	12/28/2023	20	--	--	9	49.0	19.3	0.04
	1/19/2024	151	--	--	8	49.0	20.9	0.04
	2/2/2024	345	0.6	68	48	38.0	20.9	0.04
	2/14/2024	215	0.1	32	22	43.5	20.9	0.02
	2/23/2024	245	0.0	17	14	32.6	20.9	0.02
	3/6/2024	268	--	--	--	40.0	20.7	0.00
	3/21/2024	187	0.1	21	17	38.1	20.9	0.02
SVE02	8/29/2023	416	--	--	16	81.6	--	--
	8/30/2023	1,849	--	--	23	--	20.9	0.62
	9/29/2023	403	--	--	13	73.4	20.9	0.12
	10/6/2023	382	--	--	22	66.0	20.9	--
	10/12/2023	540	--	--	16	72.0	20.9	0.10
	10/19/2023	288	--	--	14	70.0	20.9	0.08
	10/26/2023	95	--	--	10	72.0	20.9	0.04
	10/31/2023	215	--	--	18	69.4	20.9	0.10
	11/16/2023	515	--	--	15	62.6	19.8	0.02
	11/28/2023	93	--	--	19	59.8	20.2	0.02
	12/7/2023	55	--	--	18	56.0	19.6	0.02
	12/13/2023	107	--	--	25	57.1	19.3	0.00
	12/20/2023	--	--	--	24	54.4	--	--
	12/28/2023	44	--	--	18	43.5	19.3	0.02
	1/19/2024	38	--	--	16	43.5	20.9	0.04
	2/2/2024	13	0.1	33	24	34.0	20.9	0.02
	2/14/2024	75	0.1	25	18	24.5	20.9	0.03
	2/23/2024	99	0.1	26	21	29.9	20.9	0.03
	3/6/2024	105	--	--	--	10.0	20.7	0.04
	3/21/2024	25	0.1	30	24	27.2	20.9	0.03

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TABLE 2
SOIL VAPOR EXTRACTION SYSTEM FIELD MEASUREMENTS
Sunray B 1B
Hilcorp Energy Company
San Juan County, New Mexico

SVE Well ID	Date	PID (ppm)	Differential Pressure (IWC)	Flow Rate (acfm)	Flow Rate (scfm)[1][2]	Vacuum (IWC)	Oxygen (%)	Carbon Dioxide (%)
SVE03	8/29/2023	174	--	--	25	73.4	--	--
	8/30/2023	426	--	--	>25	--	20.9	0.62
	9/29/2023	248	--	--	>25	65.3	20.9	0.20
	10/6/2023	162	--	--	40	52.0	20.9	--
	10/12/2023	450	--	--	50	52.0	20.9	0.14
	10/19/2023	131	--	--	<50	55.0	20.9	0.10
	10/26/2023	88	--	--	>50	56.0	20.9	0.08
	10/31/2023	89	--	--	>50	53.0	20.9	0.02
	11/16/2023	258	--	--	>50	50.3	19.8	0.04
	11/28/2023	148	--	--	>50	47.6	20.2	0.02
	12/7/2023	45	--	--	>50	44.0	19.6	0.02
	12/13/2023	175	--	--	>50	50.3	19.3	0.02
	12/20/2023	--	--	--	>50	46.2	--	--
	12/28/2023	34	--	--	>50	35.4	19.3	0.04
	1/19/2024	31	--	--	36	35.4	20.9	0.08
	2/2/2024	74	0.7	75	55	24.0	20.9	0.02
	2/14/2024	54	0.9	82	61	23.1	20.9	0.06
	2/23/2024	63	0.6	68	53	23.1	20.9	0.06
	3/6/2024	125	--	--	--	24.0	20.5	0.06
	3/21/2024	51	0.4	52	41	23.1	20.9	0.06

Notes:

(1): individual well flow rates in scfm estimated based on rotometer field measurements through 1/19/24; calculated from pitot tube differential pressure readings beginning 2/2/24

(2): total system flow rates in scfm calculated based on pitot tube differential pressure measurements

IWC: inches of water column

PID: photoionization detector

ppm: parts per million

acfm: actual cubic feet per minute

scfm: standard cubic feet per minute

%: percent

--: not measured

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TABLE 3
SOIL VAPOR EXTRACTION SYSTEM EMISSIONS ANALYTICAL RESULTS
Sunray B 1B
Hilcorp Energy Company
San Juan County, New Mexico

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH/GRO (µg/L)	Oxygen (%)	Carbon Dioxide (%)
8/29/2023	788	18	190	6.8	58	5,900	18.38%	4.23%
8/30/2023	1,826	10	230	<10	77	6,000	21.39%	0.87%
9/29/2023	538	4.8	140	11	100	4,100	21.67%	0.36%
10/6/2023	529	<2.0	48	<5.0	41	1,400	21.74%	0.18%
10/12/2023	357	<2.0	47	<5.0	51	1,800	21.69%	0.22%
10/19/2023	399	<5.0	29	<5.0	29	1,200	21.81%	0.16%
10/26/2023	165	<5.0	26	<5.0	21	960	21.80%	0.15%
10/31/2023	278	0.53	30	3.3	42	900	21.60%	0.17%
11/16/2023	378	0.41	21	2.5	35	1,100	21.61%	0.10%
11/28/2023	147	<0.50	13	1.7	22	750	21.64%	0.10%
12/13/2023	165	<0.50	11	1.6	20	650	21.68%	0.10%
12/28/2023	39	<0.10	<0.10	<0.10	<0.15	7.5	21.73%	0.05%
1/19/2024	59	<0.50	4.7	0.58	6.0	300	21.73%	0.05%
3/6/2024	101	<5.0	<5.0	<5.0	<7.5	<250	22.19%	0.12%

Notes:

GRO: gasoline range hydrocarbons
µg/L: microgram per liter
PID: photoionization detector
ppm: parts per million
TVPH: total volatile petroleum hydrocarbons
%: percent
<: gray indicates result less than the stated laboratory reporting limit (RL)

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TABLE 4
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS
Sunray B 1B
Hilcorp Energy Company
San Juan County, New Mexico

Laboratory Analysis

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)
8/29/2023	788	18	190	6.8	58	5,900
8/30/2023	1,826	10	230	*10*	77	6,000
9/29/2023	538	4.8	140	11	100	4,100
10/6/2023	529	*2.0*	48	*5.0*	41	1,400
10/12/2023	357	*2.0*	47	*5.0*	51	1,800
10/19/2023	399	*5.0*	29	*5.0*	29	1,200
10/26/2023	165	*5.0*	26	*5.0*	21	960
10/31/2023	278	0.53	30	3.3	42	900
11/16/2023	378	0.41	21	2.5	35	1,100
11/28/2023	147	*0.50*	13	1.7	22	750
12/13/2023	165	*0.50*	11	1.60	20	650
12/28/2023	39	*0.10*	*0.10*	*0.10*	*0.15*	7.5
1/19/2024	59	*0.50*	4.7	0.58	6.0	300
3/6/2024	101	*5.0*	*5.0*	*5.0*	*7.5*	*250*
Average	412	4	57	4	36	1,808

Vapor Extraction Summary

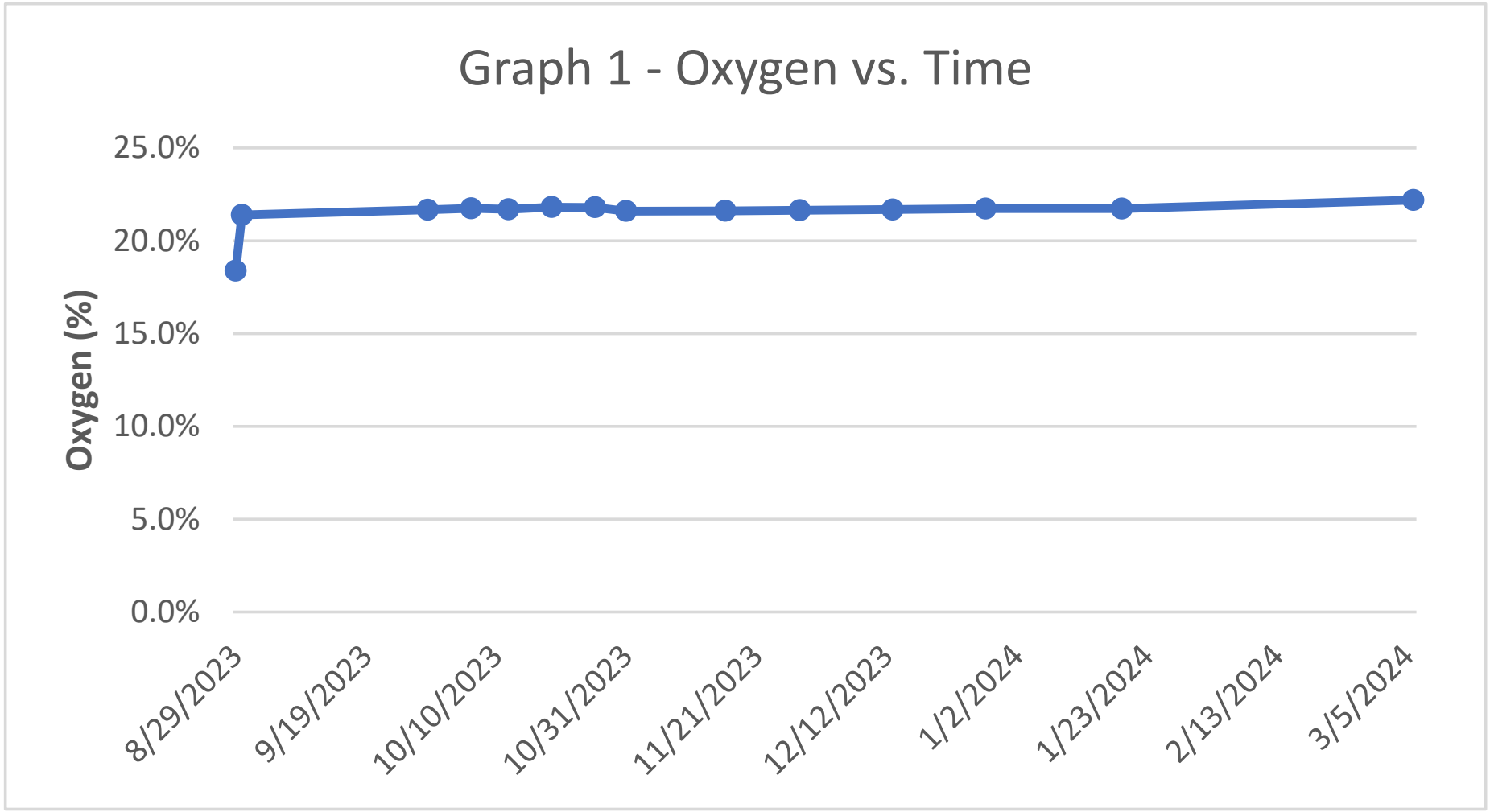
Date	Flow Rate (scfm)	Total System Flow (cf)	Delta Flow (cf)	Benzene (lb/hr)	Toluene (lb/hr)	Ethylbenzene (lb/hr)	Total Xylenes (lb/hr)	TVPH (lb/hr)
9/29/2023	99.0	Updated System Startup						
10/6/2023	101	1,015,656	1,015,656	0.00127	0.035	0.0030	0.026	1.03
10/12/2023	127	--	--	--	--	--	--	--
10/19/2023	131	3,261,258	2,245,602	0.0015	0.017	0.0022	0.0152	0.56
10/26/2023	146	4,699,650	1,438,392	0.0026	0.0142	0.0026	0.0130	0.56
10/31/2023	134	5,446,566	746,916	0.00145	0.0147	0.0022	0.0165	0.49
11/16/2023	153	8,945,064	3,498,498	0.00025	0.0137	0.0016	0.0207	0.54
11/28/2023	156	11,562,120	2,617,056	0.00026	0.0098	0.0012	0.0165	0.53
12/13/2023	153	20,905,524	9,343,404	0.00029	0.0069	0.0010	0.0121	0.40
12/28/2023	135	28,703,394	7,797,870	0.00016	0.0030	0.0005	0.0054	0.18
1/19/2024	118	37,207,182	8,503,788	0.00014	0.0011	0.0002	0.0015	0.07
3/6/2024	125	51,995,682	14,788,500	0.00125	0.0022	0.0013	0.0031	0.12
			Average	0.00092	0.012	0.0016	0.013	0.45

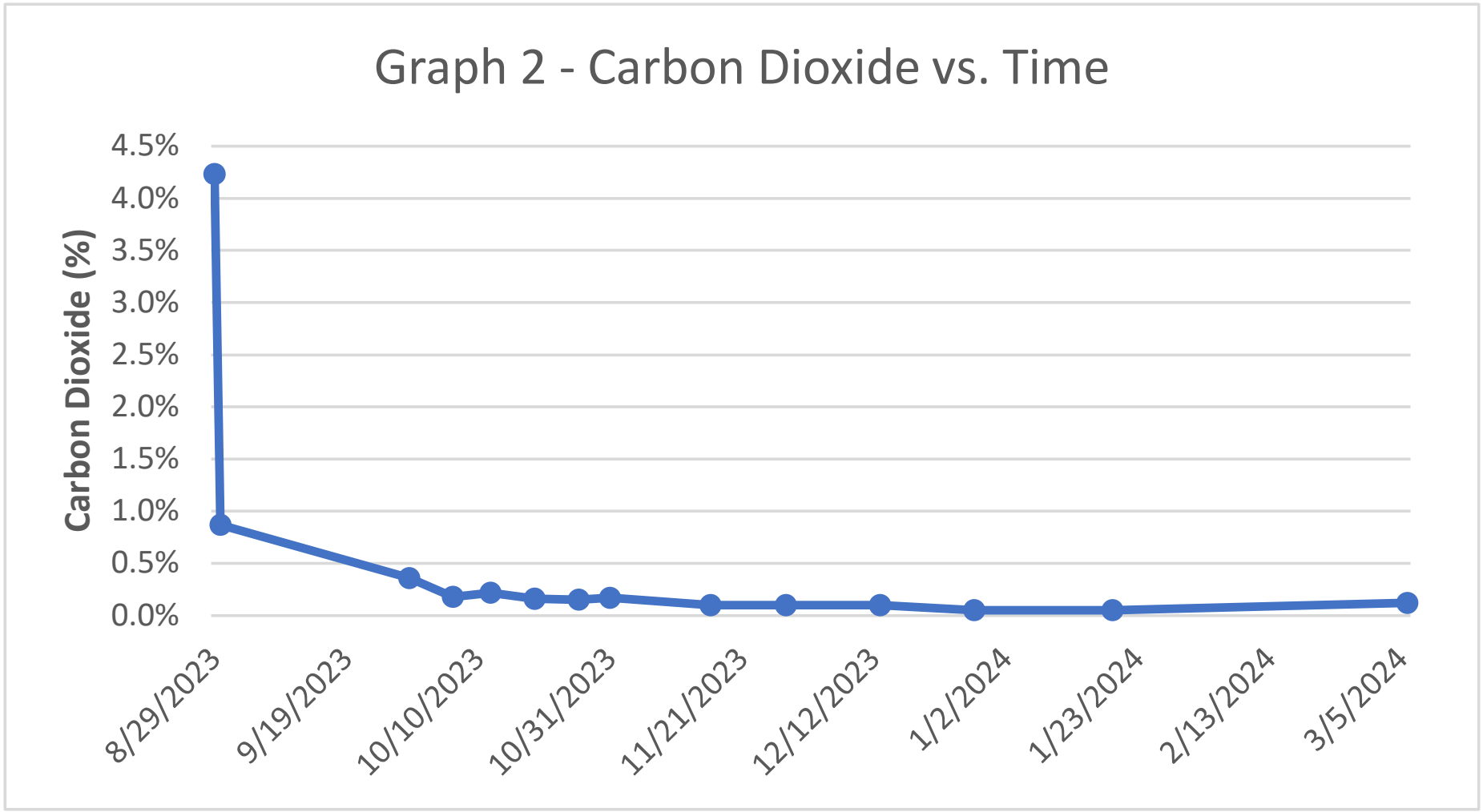
Mass Recovery

Date	Total Operational Hours	Delta Hours	Benzene (pounds)	Toluene (pounds)	Ethylbenzene (pounds)	Total Xylenes (pounds)	TVPH (pounds)	TVPH (tons)
9/29/2023	127	Updated System Startup						
10/6/2023	294	168	0.21	5.9	0.50	4.4	172	0.086
10/12/2023	--	--	--	--	--	--	--	--
10/19/2023	580	286	0.43	4.8	0.62	4.3	161	0.081
10/26/2023	744	164	0.43	2.3	0.43	2.1	92	0.046
10/31/2023	837	93	0.134	1.36	0.20	1.53	45	0.023
11/16/2023	1,218	381	0.096	5.2	0.59	7.9	205	0.102
11/28/2023	1,498	280	0.074	2.7	0.34	4.6	149	0.075
12/13/2023	1,855	1,018	0.294	7.1	0.97	12.4	412	0.206
12/28/2023	2,181	963	0.156	2.9	0.44	5.2	170	0.085
1/19/2024	2,699	1,201	0.170	1.4	0.19	1.7	87	0.044
3/6/2024	3,827	1,972	2.464	4.3	2.50	6.0	246	0.123
		Total Mass Recovery to Date	4.46	38	6.8	50	1,741	0.87

Notes:

cf: cubic feet
scfm: standard cubic feet per minute
µg/L: micrograms per liter
lb/hr: pounds per hour
PID: photoionization detector
ppm: parts per million
TVPH: total volatile petroleum hydrocarbons
--: not measured
gray: laboratory reporting limit used for calculating emissions





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APPENDIX A

Field Notes

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SUNRAY B 1B SVE SYSTEM
O&M FORM

DATE: 1-10
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: KO TANK HIGH LEVEL

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	2486.3	1900
Inlet Vacuum (IHG)		
Differential Pressure (IWC)		
Inlet PID		
Exhaust PID		
Inlet Temperature		
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)	4.5	

SVE SYSTEM SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	Sample Bi-Monthly (every other month) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	DIFF PRESSURE (IN W.C.)	OXYGEN (%)	CARBON DIOXIDE (%)
SVE01					
SVE02					
SVE03					

COMMENTS/OTHER MAINTENANCE:

System wouldn't restart after shutting down to drain fluid. Apparently this is a common problem that can be remedied by placing a heater hose on the pump.

Location Sunray B1B Date 1-19-24 19

Project / Client HEC Sunny

DB Truck, PID, HVAS, 6 gas 40s

1330 - Onsite for O+M + sampling
Review HASP + JSA
System Running upon arrival SVE0102 03
Heat trace + blanket on blower
+ KO tank.
- Running @ 40 Hz.

SVE system parameters @ 1345

Blower Hours -	2,699.2
Total Flow -	60 scfm
Inlet vac -	3 in Hg 46.9 inc
Diff. Pres -	3.79 inc
Inlet PID -	59
Exhaust PID	254 ppm
Temp -	115 °F
KO Tank level	~2 inches
Drained -	8 gallons

~~Vac System~~	SVE 01	02	03	Influent
PID ppm -	151	38	31	59
~~Diff~~ Press -	Need scfh	140	INC	3.79
Vac inc -	38	34	22	46.9
~~Flow rate~~ Rotameter -	8	16	36	= 60

14:20 Influent 1-19-24 collected
59 ppm Continued on Page

20

Location GDM Date 1-19-24

Project / Client Combi

		01	02	03	Influent
CH_4	ppm	270	115	135	140
Oxy	vol%	20.9	20.9	20.9	20.9
H_2S	ppm	0.0	0.0	0.0	0.0
CO	ppm	0	0	0	0
CO_2	vol%	0.04	0.04	0.08	0.06
CH_4	%LEL	0	0	0	0

Greased blower

Need 2" coupler sch 40

SCH 40 pipe to install pitot tubes

- 1500 - offsite

Location Sunray B 1B Date 2-2-24 21

Project / Client HEC Rainy, Snowing, 30's

DB Truck, HVAS, PID, 6-gas

1000 - Onsite for O+M + install pitot tubes.
Review HASP, sign JSA.

System running upon arrival. 3 wells Running @ 40 Hz

- No sampling today

- Pitot tubes installed on well lines.

1130 - Offsite

ENSOLUM

SUNRAY B 1B SVE SYSTEM
O&M FORM

DATE: 2-2-24
TIME ONSITE: 1000
O&M PERSONNEL: DB
TIME OFFSITE: 1130

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:	NO	KO TANK HIGH LEVEL
		Check/Date
WEEKLY MAINTENANCE	Blower Bearing Grease	
QUARTERLY MAINTENANCE	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours (take photo)	3032.1	1030
Inlet Vacuum (IHG)	345	
Differential Pressure (IWC)	3.65	
Inlet PID	143	
Exhaust PID	152	
Exhaust Gas Temperature	90	
K/O Tank Liquid Level	~2 in	
K/O Liquid Drained (gallons)	2.0 gal	

SVE SYSTEM SAMPLING

SAMPLE ID: NONE
SAMPLE TIME
Analytes: Sample Bi-Monthly (every other month) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS

Change in Well Operation: None

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IWC)	PID HEADSPACE (PPM)	DIFF PRESSURE (IN W.C.)	OXYGEN (%)	CARBON DIOXIDE (%)
SVE01	38	345	0.6		
SVE02	34	12.6	0.19		
SVE03	24	74	0.73		

COMMENTS/OTHER MAINTENANCE

Installed pitot tubes in flow lines before rotameters.

	Influent	01	02	03
CH_4 ppm	75	250	40	70
Oxy vol%	20.9	20.9	20.9	20.9
H_2S ppm	0.0	0.0	0.0	0.0
CO ppm	0	0	0	0
CO_2 vol%	0.02	0.04	0.02	0.02
CH_4 %LEL	0	0	0	0

ENSOLUM

SUNRAY B 1B SVE SYSTEM
O&M FORM

DATE: 2-14
TIME ONSITE: _____

O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: KO TANK HIGH LEVEL

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	3320.5	1037
Inlet Vacuum (IHG)	3.75	
Differential Pressure (IWC)	3.41	
Inlet PID	328.6	
Exhaust PID	95.8	
°F Inlet Temperature	112.5	
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)		

SVE SYSTEM SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	Sample Bi-Monthly (every other month) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	DIFF PRESSURE (IN W.C.)	OXYGEN (%)	CARBON DIOXIDE (%)
SVE01	3.2	214.5	0.13	20.9	180
SVE02	1.8	7.5	0.08	20.9	300
SVE03	1.7	53.6	0.88	20.7	620

COMMENTS/OTHER MAINTENANCE:

ENSOLUM

SUNRAY B 1B SVE SYSTEM
O&M FORM

DATE: 2-23
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: KO TANK HIGH LEVEL

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	✓
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	3540.0	1340
Inlet Vacuum (IHG)	3.25	
Differential Pressure (IWC)	3.53	
Inlet PID	203.5	
Exhaust PID	86.2	
Inlet Temperature	115°F	
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)	8	

SVE SYSTEM SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	Sample Bi-Monthly (every other month) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	DIFF PRESSURE (IN W.C.)	OXYGEN (%)	CARBON DIOXIDE (%)
SVE01	2.4	24.5	0.04	20.9	240
SVE02	2.2	98.9	0.09	20.9	260
SVE03	1.7	62.6	0.62	20.9	600

COMMENTS/OTHER MAINTENANCE:

ENSOLUM

SUNRAY B 1B SVE SYSTEM
O&M FORM

DATE: 3/6/24 O&M PERSONNEL: Reece Hansen
TIME ONSITE: 11:45 TIME OFFSITE: 13:25

SVE SYSTEM - MONTHLY O&M

SVE ALARMS:	KO TANK HIGH LEVEL

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	✓ 3/6/24
QUARTERLY MAINTENANCE:	Blower Oil Change	—

SVE SYSTEM	READING	TIME
Blower Hours (take photo)	3826.8	12:05
Inlet Vacuum (IHG)	3.5	
Differential Pressure (IWC)	3.3	
Inlet PID	101	
Exhaust PID	99	
Inlet Temperature	—	
K/O Tank Liquid Level	2"	
K/O Liquid Drained (gallons)	4	

SVE SYSTEM SAMPLING

SAMPLE ID:	NA SAMPLE TIME:
Analytes:	Sample Bi-Monthly (every other month) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	All wells open

Change in Well Operation: —

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (~~IHG~~ IWC)	PID HEADSPACE (PPM)	DIFF PRESSURE (IN W.C.)	OXYGEN (%)	CARBON DIOXIDE (%)	SCFM Flow
SVE01	40	268	0	20.7	0	5
SVE02	10	105	0	20.7	0.04	16
SVE03	24	125	0.5	20.5	0.06	36

COMMENTS/OTHER MAINTENANCE:

After turning system off to grease blower + drain K/O tank, Motor wouldn't turn back on - control flashing between ~20 Hz + "OL" (Stall prevention Error) - Control set @ 40 Hz, Turn down to 30 Hz, Motor slowly started up, turn up to 40 Hz. Running normal upon departure.

* Belt between Motor + Blower needs to be replaced

ENSOLUM

SUNRAY B 1B SVE SYSTEM
O&M FORM

DATE: 3-21
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: KO TANK HIGH LEVEL

		Check/Date
WEEKLY MAINTENANCE:	Blower Bearing Grease	
QUARTERLY MAINTENANCE:	Blower Oil Change	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	4185.4	1124
Inlet Vacuum (IHG)	3.125	
Differential Pressure (IWC)	3.54	
Inlet PID	85.7	
Exhaust PID	77.2	
exhaust ~~Inlet~~ Temperature	125°F	
K/O Tank Liquid Level		
K/O Liquid Drained (gallons)	10	

SVE SYSTEM SAMPLING

SAMPLE ID:	**SAMPLE TIME:**
Analytes:	Sample Bi-Monthly (every other month) for TVPH (8015), BTEX (8260), Fixed Gas (CO2 AND O2)
OPERATING WELLS	

Change in Well Operation:

WELLHEAD MEASUREMENTS

WELL ID	VACUUM (IHG)	PID HEADSPACE (PPM)	DIFF PRESSURE (IN W.C.)	OXYGEN (%)	CARBON DIOXIDE (%)
SVE01	2.8	187.2	0.06	20.9	200
SVE02	2.0	75.2	0.12	20.9	300
SVE03	1.7	51.3	0.56	20.9	600

COMMENTS/OTHER MAINTENANCE:

Changed blower belt

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APPENDIX B

Project Photographs

PROJECT PHOTOGRAPHS
Sunray B 1B
San Juan County, New Mexico
Hilcorp Energy Company

Photograph 1 Runtime meter taken on December 28, 2023 at 1:38 PM Hours = 2,181.4	
Photograph 2 Runtime meter taken on March 21, 2024 at 11:24 AM Hours = 4,185.4	

Ensolum, LLC | Environmental & Hydrogeologic Consultants
Durango, Colorado | info@ensolum.com

ENSOLUM

APPENDIX C

Laboratory Analytical Reports

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 15, 2024

Stuart Hyde
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Sunray B1B OrderNo.: 2312F18

Dear Stuart Hyde:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 12/29/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2312F18**
Date Reported: **1/15/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Sunray B1B Influent
Project: Sunray B1B
Collection Date: 12/28/2023 2:25:00 PM
Lab ID: 2312F18-001 **Matrix:** AIR
Received Date: 12/29/2023 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	7.5	5.0		µg/L	1	1/3/2024 3:28:18 PM
Surr: BFB	113	15-412		%Rec	1	1/3/2024 3:28:18 PM
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Toluene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Ethylbenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,2,4-Trimethylbenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,3,5-Trimethylbenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,2-Dichloroethane (EDC)	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,2-Dibromoethane (EDB)	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Naphthalene	ND	0.20		µg/L	1	1/5/2024 4:47:00 PM
1-Methylnaphthalene	ND	0.40		µg/L	1	1/5/2024 4:47:00 PM
2-Methylnaphthalene	ND	0.40		µg/L	1	1/5/2024 4:47:00 PM
Acetone	ND	1.0		µg/L	1	1/5/2024 4:47:00 PM
Bromobenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Bromodichloromethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Bromoform	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Bromomethane	ND	0.20		µg/L	1	1/5/2024 4:47:00 PM
2-Butanone	ND	1.0		µg/L	1	1/5/2024 4:47:00 PM
Carbon disulfide	ND	1.0		µg/L	1	1/5/2024 4:47:00 PM
Carbon tetrachloride	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Chlorobenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Chloroethane	ND	0.20		µg/L	1	1/5/2024 4:47:00 PM
Chloroform	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Chloromethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
2-Chlorotoluene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
4-Chlorotoluene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
cis-1,2-DCE	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
cis-1,3-Dichloropropene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,2-Dibromo-3-chloropropane	ND	0.20		µg/L	1	1/5/2024 4:47:00 PM
Dibromochloromethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Dibromomethane	ND	0.20		µg/L	1	1/5/2024 4:47:00 PM
1,2-Dichlorobenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,3-Dichlorobenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,4-Dichlorobenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Dichlorodifluoromethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,1-Dichloroethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,1-Dichloroethene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2312F18**
Date Reported: **1/15/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Sunray B1B Influent
Project: Sunray B1B
Collection Date: 12/28/2023 2:25:00 PM
Lab ID: 2312F18-001 **Matrix:** AIR
Received Date: 12/29/2023 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,2-Dichloropropane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,3-Dichloropropane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
2,2-Dichloropropane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,1-Dichloropropene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Hexachlorobutadiene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
2-Hexanone	ND	1.0		µg/L	1	1/5/2024 4:47:00 PM
Isopropylbenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
4-Isopropyltoluene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
4-Methyl-2-pentanone	ND	1.0		µg/L	1	1/5/2024 4:47:00 PM
Methylene chloride	ND	0.30		µg/L	1	1/5/2024 4:47:00 PM
n-Butylbenzene	ND	0.30		µg/L	1	1/5/2024 4:47:00 PM
n-Propylbenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
sec-Butylbenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Styrene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
tert-Butylbenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,1,1,2-Tetrachloroethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,1,2,2-Tetrachloroethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Tetrachloroethene (PCE)	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
trans-1,2-DCE	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
trans-1,3-Dichloropropene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,2,3-Trichlorobenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,2,4-Trichlorobenzene	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,1,1-Trichloroethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,1,2-Trichloroethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Trichloroethene (TCE)	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Trichlorofluoromethane	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
1,2,3-Trichloropropane	ND	0.20		µg/L	1	1/5/2024 4:47:00 PM
Vinyl chloride	ND	0.10		µg/L	1	1/5/2024 4:47:00 PM
Xylenes, Total	ND	0.15		µg/L	1	1/5/2024 4:47:00 PM
Surr: Dibromofluoromethane	103	70-130		%Rec	1	1/5/2024 4:47:00 PM
Surr: 1,2-Dichloroethane-d4	99.6	70-130		%Rec	1	1/5/2024 4:47:00 PM
Surr: Toluene-d8	99.4	70-130		%Rec	1	1/5/2024 4:47:00 PM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	1/5/2024 4:47:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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ANALYTICAL SUMMARY REPORT

January 11, 2024

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B24010204 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 1/3/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24010204-001	2312F18-001B, Sunray B1B Influent	12/28/23 14:25	01/03/24	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B24010204-001
Client Sample ID: 2312F18-001B, Sunray B1B Influent

Report Date: 01/11/24
Collection Date: 12/28/23 14:25
DateReceived: 01/03/24
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.73	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Nitrogen	78.22	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Carbon Dioxide	0.05	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	01/09/24 09:55 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	01/09/24 09:55 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	01/09/24 09:55 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	01/09/24 09:55 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	01/09/24 09:55 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	01/09/24 09:55 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	01/09/24 09:55 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	01/09/24 09:55 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	01/09/24 09:55 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-95	01/09/24 09:55 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-95	01/09/24 09:55 / jrj
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	01/09/24 09:55 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	01/09/24 09:55 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	01/09/24 09:55 / jrj
Air, %	99.27			0.01		GPA 2261-95	01/09/24 09:55 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	01/09/24 09:55 / jrj

- BTU, GPM, and specific gravity are corrected for deviation from ideal gas behavior.
- GPM = gallons of liquid at standard conditions per 1000 cu. ft. of moisture free gas @ standard conditions.
- To convert BTU to a water-saturated basis @ standard conditions, multiply by 0.9825.
- Standard conditions: 60 F & 14.73 psi on a dry basis.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B24010204 **Report Date:** 01/11/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: GPA 2261-95										Batch: R414891
Lab ID: LCS010924	11	Laboratory Control Sample				Run: GCNGA-B_240109A				01/09/24 03:25
Oxygen		0.64	Mol %	0.01	128	70	130			
Nitrogen		6.34	Mol %	0.01	106	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.4	Mol %	0.01	100	70	130			
Ethane		6.02	Mol %	0.01	100	70	130			
Propane		5.00	Mol %	0.01	101	70	130			
Isobutane		1.77	Mol %	0.01	88	70	130			
n-Butane		1.99	Mol %	0.01	99	70	130			
Isopentane		1.00	Mol %	0.01	100	70	130			
n-Pentane		1.00	Mol %	0.01	100	70	130			
Hexanes plus		0.81	Mol %	0.01	101	70	130			
Lab ID: B24010204-001ADUP	12	Sample Duplicate				Run: GCNGA-B_240109A				01/09/24 10:44
Oxygen		21.7	Mol %	0.01				0.0	20	
Nitrogen		78.2	Mol %	0.01				0.0	20	
Carbon Dioxide		0.05	Mol %	0.01				0.0	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		<0.01	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		<0.01	Mol %	0.01					20	
n-Butane		<0.01	Mol %	0.01					20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		<0.01	Mol %	0.01					20	

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B24010204

Login completed by: Yvonna E. Smith
Date Received: 1/3/2024
Reviewed by: dharris
Received by: cmj
Reviewed Date: 1/4/2024
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	11.8°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

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CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: **Energy Labs -Billings**	COMPANY: **Energy Laboratories**		PHONE: **(406) 869-6253**	FAX: **(406) 252-6069**	
ADDRESS: **1120 South 27th Street**			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: **Billings, MT 59107**					

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2312F18-001B	Sunray B1B Influent	TEDLAR	Air	12/28/2023 2:25:00 PM	1	Natural Gas Analysis. C02+02. B24010204

NW 12/29/23

SPECIAL INSTRUCTIONS / COMMENTS:

Include the LAB ID and CLIENT SAMPLE ID on final reports. Email results to Hall.Lab@et.eurofinsus.com. For Questions email Hall.samplecontrol@et.eurofinsus.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 12/29/2023	Time: 9:55 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Crystal Jones	Date: 1/3/24	Time: 0900

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

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Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **HILCORP ENERGY** Work Order Number: **2312F18** RcptNo: **1**

Received By: **Tracy Casarrubias** **12/29/2023 7:00:00 AM**

Completed By: **Tracy Casarrubias** **12/29/2023 9:52:24 AM**

Reviewed By: JH 12/29/23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☐	NA ☑
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JH 12-29-23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: Mailing address,phone number and Email/Fax are missingo on COC- TMC 12/29/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	N/A	Good	Yes			

Chain-of-Custody Record

Client: Hilcorp: Mitch Killough
mkillough@hilcorp.com
Mailing Address:

Phone #:
email or Fax#:
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush
Project Name: Sunray B 1B
Project #:
Project Manager: Stuart Hyde
shyde@ensolum.com
Sampler: Zach Myers
On Ice: ~~☑~~ Yes ☑ No ~~NA~~
# of Coolers: 1 N/A TMC 12/28/23
Cooler Temp(Including CF): ~~1.1 + 0 = 1.1~~ (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 231218
12/28	1425	gas	Sunray B 1B Influent	2x tedlar	—	001

Analysis Request

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) full list	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Fixed gas CO_2, O_2
	X						X			X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
12/28/23	1515				12/28/23	1515
12/28/23	1746			courier	12/29/23	7:00

Remarks:
cc: zmyers@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.

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Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 09, 2024

Mitch Killough
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Sunray B1B OrderNo.: 2312983

Dear Mitch Killough:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 12/16/2023 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2312983**
Date Reported: **2/9/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Sunray B1B Influent
Project: Sunray B1B
Collection Date: 12/13/2023 12:40:00 PM
Lab ID: 2312983-001 **Matrix:** AIR
Received Date: 12/16/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Toluene	11	0.50		µg/L	5	12/21/2023 2:30:00 PM
Ethylbenzene	1.6	0.50		µg/L	5	12/21/2023 2:30:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,2,4-Trimethylbenzene	3.6	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,3,5-Trimethylbenzene	3.2	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Naphthalene	ND	1.0		µg/L	5	12/21/2023 2:30:00 PM
1-Methylnaphthalene	ND	2.0		µg/L	5	12/21/2023 2:30:00 PM
2-Methylnaphthalene	ND	2.0		µg/L	5	12/21/2023 2:30:00 PM
Acetone	ND	5.0		µg/L	5	12/21/2023 2:30:00 PM
Bromobenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Bromodichloromethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Bromoform	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Bromomethane	ND	1.0		µg/L	5	12/21/2023 2:30:00 PM
2-Butanone	ND	5.0		µg/L	5	12/21/2023 2:30:00 PM
Carbon disulfide	ND	5.0		µg/L	5	12/21/2023 2:30:00 PM
Carbon tetrachloride	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Chlorobenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Chloroethane	ND	1.0		µg/L	5	12/21/2023 2:30:00 PM
Chloroform	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Chloromethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
2-Chlorotoluene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
4-Chlorotoluene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
cis-1,2-DCE	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
cis-1,3-Dichloropropene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,2-Dibromo-3-chloropropane	ND	1.0		µg/L	5	12/21/2023 2:30:00 PM
Dibromochloromethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Dibromomethane	ND	1.0		µg/L	5	12/21/2023 2:30:00 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Dichlorodifluoromethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,1-Dichloroethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,1-Dichloroethene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,2-Dichloropropane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,3-Dichloropropane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
2,2-Dichloropropane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2312983**
Date Reported: **2/9/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Sunray B1B Influent
Project: Sunray B1B
Collection Date: 12/13/2023 12:40:00 PM
Lab ID: 2312983-001 **Matrix:** AIR
Received Date: 12/16/2023 7:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,1-Dichloropropene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Hexachlorobutadiene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
2-Hexanone	ND	5.0		µg/L	5	12/21/2023 2:30:00 PM
Isopropylbenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
4-Isopropyltoluene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
4-Methyl-2-pentanone	ND	5.0		µg/L	5	12/21/2023 2:30:00 PM
Methylene chloride	ND	1.5		µg/L	5	12/21/2023 2:30:00 PM
n-Butylbenzene	ND	1.5		µg/L	5	12/21/2023 2:30:00 PM
n-Propylbenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
sec-Butylbenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Styrene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
tert-Butylbenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Tetrachloroethene (PCE)	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
trans-1,2-DCE	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
trans-1,3-Dichloropropene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Trichloroethene (TCE)	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Trichlorofluoromethane	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	5	12/21/2023 2:30:00 PM
Vinyl chloride	ND	0.50		µg/L	5	12/21/2023 2:30:00 PM
Xylenes, Total	20	0.75		µg/L	5	12/21/2023 2:30:00 PM
Surr: Dibromofluoromethane	102	70-130		%Rec	5	12/21/2023 2:30:00 PM
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%Rec	5	12/21/2023 2:30:00 PM
Surr: Toluene-d8	121	70-130		%Rec	5	12/21/2023 2:30:00 PM
Surr: 4-Bromofluorobenzene	113	70-130		%Rec	5	12/21/2023 2:30:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	650	25		µg/L	5	12/21/2023 2:30:00 PM
Surr: BFB	111	70-130		%Rec	5	12/21/2023 2:30:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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ANALYTICAL SUMMARY REPORT

December 28, 2023

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B23121311 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 12/19/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23121311-001	2312983-001B, Sunray B1B Influent	12/13/23 12:40	12/19/23	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

ENERGY LABORATORIES
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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B23121311-001
Client Sample ID: 2312983-001B, Sunray B1B Influent

Report Date: 12/28/23
Collection Date: 12/13/23 12:40
DateReceived: 12/19/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.68	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Nitrogen	78.22	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Carbon Dioxide	0.10	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	12/20/23 01:07 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	12/20/23 01:07 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	12/20/23 01:07 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	12/20/23 01:07 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	12/20/23 01:07 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	12/20/23 01:07 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/20/23 01:07 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	12/20/23 01:07 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/20/23 01:07 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-95	12/20/23 01:07 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-95	12/20/23 01:07 / jrj
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	12/20/23 01:07 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	12/20/23 01:07 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	12/20/23 01:07 / jrj
Air, %	99.04			0.01		GPA 2261-95	12/20/23 01:07 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	12/20/23 01:07 / jrj

- BTU, GPM, and specific gravity are corrected for deviation from ideal gas behavior.
- GPM = gallons of liquid at standard conditions per 1000 cu. ft. of moisture free gas @ standard conditions.
- To convert BTU to a water-saturated basis @ standard conditions, multiply by 0.9825.
- Standard conditions: 60 F & 14.73 psi on a dry basis.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

ENERGY LABORATORIES
Trust our People. Trust our Data.
www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B23121311 **Report Date:** 12/28/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R414179
Lab ID: **B23121311-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_231220A				12/20/23 01:57
Oxygen		21.7	Mol %	0.01				0.0	20	
Nitrogen		78.2	Mol %	0.01				0	20	
Carbon Dioxide		0.09	Mol %	0.01				11	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		0.02	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		<0.01	Mol %	0.01					20	
n-Butane		<0.01	Mol %	0.01					20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		<0.01	Mol %	0.01					20	
Lab ID: **LCS122123**	11	Laboratory Control Sample				Run: GCNGA-B_231220A				12/20/23 03:37
Oxygen		0.64	Mol %	0.01	128	70	130			
Nitrogen		6.14	Mol %	0.01	102	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.6	Mol %	0.01	100	70	130			
Ethane		6.02	Mol %	0.01	100	70	130			
Propane		5.01	Mol %	0.01	101	70	130			
Isobutane		1.80	Mol %	0.01	90	70	130			
n-Butane		1.99	Mol %	0.01	99	70	130			
Isopentane		1.00	Mol %	0.01	100	70	130			
n-Pentane		0.99	Mol %	0.01	99	70	130			
Hexanes plus		0.79	Mol %	0.01	99	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

Work Order Receipt Checklist

Hall Environmental

B23121311

Login completed by: Crystal M. Jones
Date Received: 12/19/2023
Reviewed by: cjohnson
Received by: cmj
Reviewed Date: 12/21/2023
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	14.4°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

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CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: **Energy Labs -Billings**	COMPANY: **Energy Laboratories**	PHONE: **(406) 869-6253**	FAX: **(406) 252-6069**
ADDRESS: **1120 South 27th Street**		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: **Billings, MT 59107**			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2312983-001B	Sunray B1B Influent	TEDLAR	Air	12/13/2023 12:40:00 PM	1	Natural Gas Analysis. CO2+O2

B23121311

SPECIAL INSTRUCTIONS / COMMENTS:

Include the LAB ID and CLIENT SAMPLE ID on final reports. Email results to Hall.Lab@et.eurofinsus.com. For Questions email Hall.samplecontrol@et.eurofinsus.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 12/16/2023	Time: 8:31 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Crystal Tres	Date: 12/19/23	Time: 0910

TAT: Standard ☐ **RUSH** Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples _____ °C Attempt to Cool ? _____
Comments: _____

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2312983**
09-Feb-24

Client: HILCORP ENERGY
Project: Sunray B1B

Sample ID: **2312983-001adup** SampType: **DUP** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **Sunray B1B Influent** Batch ID: **R102009** RunNo: **102009**
Prep Date: Analysis Date: **12/21/2023** SeqNo: **3765126** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50						0	20	
Toluene	11	0.50						0.0744	20	
Ethylbenzene	1.6	0.50						1.75	20	
Methyl tert-butyl ether (MTBE)	ND	0.50						0	20	
1,2,4-Trimethylbenzene	3.8	0.50						5.86	20	
1,3,5-Trimethylbenzene	3.4	0.50						3.80	20	
1,2-Dichloroethane (EDC)	ND	0.50						0	20	
1,2-Dibromoethane (EDB)	ND	0.50						0	20	
Naphthalene	ND	1.0						0	20	
1-Methylnaphthalene	ND	2.0						0	20	
2-Methylnaphthalene	ND	2.0						0	20	
Acetone	ND	5.0						0	20	
Bromobenzene	ND	0.50						0	20	
Bromodichloromethane	ND	0.50						0	20	
Bromoform	ND	0.50						0	20	
Bromomethane	ND	1.0						0	20	
2-Butanone	ND	5.0						0	20	
Carbon disulfide	ND	5.0						0	20	
Carbon tetrachloride	ND	0.50						0	20	
Chlorobenzene	ND	0.50						0	20	
Chloroethane	ND	1.0						0	20	
Chloroform	ND	0.50						0	20	
Chloromethane	ND	0.50						0	20	
2-Chlorotoluene	ND	0.50						0	20	
4-Chlorotoluene	ND	0.50						0	20	
cis-1,2-DCE	ND	0.50						0	20	
cis-1,3-Dichloropropene	ND	0.50						0	20	
1,2-Dibromo-3-chloropropane	ND	1.0						0	20	
Dibromochloromethane	ND	0.50						0	20	
Dibromomethane	ND	1.0						0	20	
1,2-Dichlorobenzene	ND	0.50						0	20	
1,3-Dichlorobenzene	ND	0.50						0	20	
1,4-Dichlorobenzene	ND	0.50						0	20	
Dichlorodifluoromethane	ND	0.50						0	20	
1,1-Dichloroethane	ND	0.50						0	20	
1,1-Dichloroethene	ND	0.50						0	20	
1,2-Dichloropropane	ND	0.50						0	20	
1,3-Dichloropropane	ND	0.50						0	20	
2,2-Dichloropropane	ND	0.50						0	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2312983**

09-Feb-24

Client: HILCORP ENERGY

Project: Sunray B1B

Sample ID: **2312983-001adup** SampType: **DUP** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **Sunray B1B Influent** Batch ID: **R102009** RunNo: **102009**

Prep Date: Analysis Date: **12/21/2023** SeqNo: **3765126** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.50						0	20	
Hexachlorobutadiene	ND	0.50						0	20	
2-Hexanone	ND	5.0						0	20	
Isopropylbenzene	ND	0.50						0	20	
4-Isopropyltoluene	ND	0.50						0	20	
4-Methyl-2-pentanone	ND	5.0						0	20	
Methylene chloride	ND	1.5						0	20	
n-Butylbenzene	ND	1.5						0	20	
n-Propylbenzene	ND	0.50						0	20	
sec-Butylbenzene	ND	0.50						0	20	
Styrene	ND	0.50						0	20	
tert-Butylbenzene	ND	0.50						0	20	
1,1,1,2-Tetrachloroethane	ND	0.50						0	20	
1,1,2,2-Tetrachloroethane	ND	0.50						0	20	
Tetrachloroethene (PCE)	ND	0.50						0	20	
trans-1,2-DCE	ND	0.50						0	20	
trans-1,3-Dichloropropene	ND	0.50						0	20	
1,2,3-Trichlorobenzene	ND	0.50						0	20	
1,2,4-Trichlorobenzene	ND	0.50						0	20	
1,1,1-Trichloroethane	ND	0.50						0	20	
1,1,2-Trichloroethane	ND	0.50						0	20	
Trichloroethene (TCE)	ND	0.50						0	20	
Trichlorofluoromethane	ND	0.50						0	20	
1,2,3-Trichloropropane	ND	1.0						0	20	
Vinyl chloride	ND	0.50						0	20	
Xylenes, Total	20	0.75						0.0843	20	
Surr: Dibromofluoromethane	5.1		5.000		102	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	4.7		5.000		94.5	70	130	0	0	
Surr: Toluene-d8	6.0		5.000		119	70	130	0	0	
Surr: 4-Bromofluorobenzene	5.7		5.000		115	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2312983**

09-Feb-24

Client: HILCORP ENERGY

Project: Sunray B1B

Sample ID: **2312983-001adup** SampType: **DUP** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **Sunray B1B Influent** Batch ID: **G102009** RunNo: **102009**

Prep Date: Analysis Date: **12/21/2023** SeqNo: **3765717** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	650	25						0.155	20	
Surr: BFB	5400		5000		108	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Hilcorp Energy | Work Order Number: 2312983 | RcptNo: 1

Received By: Tracy Casarrubias 12/16/2023 7:35:00 AM

Completed By: Tracy Casarrubias 12/16/2023 8:28:00 AM

Reviewed By: JN 12/18/23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	~~No ☑~~ NR 12/18/23	NA ☑
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	Not required
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: 12/18/23

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: Mailing address,phone number and Email/Fax are missing on COC- TMC 12/16/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	N/A	Good	Yes			

Chain-of-Custody Record

Client: Hilcorp: attn Mitch Killough

mkillough@hilcorp.com

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☑ Standard ☐ Rush

Project Name: Sunray B 1B

Project #:

Project Manager: Stuart Hyde

shyde@ensolum.com

Sampler: Zach Myers

On Ice: ☐ Yes ☒ No

# of Coolers: 1

Cooler Temp(including CF): N/A (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2312983	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)	
12/13/23	1240	gas	Sunray B 1B Influent	2x tedlar	-	001		X						X (full list)			X Fixed gas CO_2, O_2

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/15/23	1425				12/15/23	1425
12/15/23	1742			courier	12/16/23	7:35

Remarks: cc: zmyers@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.

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Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 08, 2024

Mitch Killough
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Sunray B1B OrderNo.: 2401851

Dear Mitch Killough:

Eurofins Environment Testing South Central, LLC received 1 sample(s) on 1/20/2024 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2401851**
Date Reported: **2/8/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 1-19-24
Project: Sunray B1B
Collection Date: 1/19/2024 2:20:00 PM
Lab ID: 2401851-001 **Matrix:** AIR
Received Date: 1/20/2024 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	300	25		µg/L	5	1/25/2024 12:43:00 PM
Surr: BFB	250	15-412		%Rec	5	1/25/2024 12:43:00 PM
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Toluene	4.7	0.50		µg/L	5	2/1/2024 1:15:00 PM
Ethylbenzene	0.58	0.50		µg/L	5	2/1/2024 1:15:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,2,4-Trimethylbenzene	0.65	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,3,5-Trimethylbenzene	0.72	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Naphthalene	ND	1.0		µg/L	5	2/1/2024 1:15:00 PM
1-Methylnaphthalene	ND	2.0		µg/L	5	2/1/2024 1:15:00 PM
2-Methylnaphthalene	ND	2.0		µg/L	5	2/1/2024 1:15:00 PM
Acetone	ND	5.0		µg/L	5	2/1/2024 1:15:00 PM
Bromobenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Bromodichloromethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Bromoform	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Bromomethane	ND	1.0		µg/L	5	2/1/2024 1:15:00 PM
2-Butanone	ND	5.0		µg/L	5	2/1/2024 1:15:00 PM
Carbon disulfide	ND	5.0		µg/L	5	2/1/2024 1:15:00 PM
Carbon tetrachloride	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Chlorobenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Chloroethane	ND	1.0		µg/L	5	2/1/2024 1:15:00 PM
Chloroform	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Chloromethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
2-Chlorotoluene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
4-Chlorotoluene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
cis-1,2-DCE	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
cis-1,3-Dichloropropene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,2-Dibromo-3-chloropropane	ND	1.0		µg/L	5	2/1/2024 1:15:00 PM
Dibromochloromethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Dibromomethane	ND	1.0		µg/L	5	2/1/2024 1:15:00 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Dichlorodifluoromethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,1-Dichloroethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,1-Dichloroethene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2401851**
Date Reported: **2/8/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 1-19-24
Project: Sunray B1B
Collection Date: 1/19/2024 2:20:00 PM
Lab ID: 2401851-001 **Matrix:** AIR
Received Date: 1/20/2024 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,2-Dichloropropane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,3-Dichloropropane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
2,2-Dichloropropane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,1-Dichloropropene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Hexachlorobutadiene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
2-Hexanone	ND	5.0		µg/L	5	2/1/2024 1:15:00 PM
Isopropylbenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
4-Isopropyltoluene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
4-Methyl-2-pentanone	ND	5.0		µg/L	5	2/1/2024 1:15:00 PM
Methylene chloride	ND	1.5		µg/L	5	2/1/2024 1:15:00 PM
n-Butylbenzene	ND	1.5		µg/L	5	2/1/2024 1:15:00 PM
n-Propylbenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
sec-Butylbenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Styrene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
tert-Butylbenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Tetrachloroethene (PCE)	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
trans-1,2-DCE	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
trans-1,3-Dichloropropene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Trichloroethene (TCE)	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Trichlorofluoromethane	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	5	2/1/2024 1:15:00 PM
Vinyl chloride	ND	0.50		µg/L	5	2/1/2024 1:15:00 PM
Xylenes, Total	6.0	0.75		µg/L	5	2/1/2024 1:15:00 PM
Surr: Dibromofluoromethane	98.3	70-130		%Rec	5	2/1/2024 1:15:00 PM
Surr: 1,2-Dichloroethane-d4	99.5	70-130		%Rec	5	2/1/2024 1:15:00 PM
Surr: Toluene-d8	107	70-130		%Rec	5	2/1/2024 1:15:00 PM
Surr: 4-Bromofluorobenzene	126	70-130		%Rec	5	2/1/2024 1:15:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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ANALYTICAL SUMMARY REPORT

January 30, 2024

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B24011072 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 1/23/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24011072-001	2401851-001B, Influent 1-19-24	01/19/24 14:20	01/23/24	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B24011072-001
Client Sample ID: 2401851-001B, Influent 1-19-24

Report Date: 01/30/24
Collection Date: 01/19/24 14:20
DateReceived: 01/23/24
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.78	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Nitrogen	78.14	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Carbon Dioxide	0.09	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	01/29/24 09:52 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	01/29/24 09:52 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	01/29/24 09:52 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	01/29/24 09:52 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	01/29/24 09:52 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	01/29/24 09:52 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	01/29/24 09:52 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	01/29/24 09:52 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	01/29/24 09:52 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-95	01/29/24 09:52 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-95	01/29/24 09:52 / jrj
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	01/29/24 09:52 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	01/29/24 09:52 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	01/29/24 09:52 / jrj
Air, %	99.49			0.01		GPA 2261-95	01/29/24 09:52 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	01/29/24 09:52 / jrj

- BTU, GPM, and specific gravity are corrected for deviation from ideal gas behavior.
- GPM = gallons of liquid at standard conditions per 1000 cu. ft. of moisture free gas @ standard conditions.
- To convert BTU to a water-saturated basis @ standard conditions, multiply by 0.9825.
- Standard conditions: 60 F & 14.73 psi on a dry basis.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B24011072 **Report Date:** 01/30/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R415794
Lab ID: **B24011072-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_240129A			01/29/24 10:41	
Oxygen		21.8	Mol %	0.01				0.1	20	
Nitrogen		78.1	Mol %	0.01				0	20	
Carbon Dioxide		<0.01	Mol %	0.01					20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		<0.01	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		0.06	Mol %	0.01					20	
n-Butane		<0.01	Mol %	0.01					20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		<0.01	Mol %	0.01					20	
Lab ID: **LCS012924**	11	Laboratory Control Sample				Run: GCNGA-B_240129A			01/29/24 01:18	
Oxygen		0.64	Mol %	0.01	128	70	130			
Nitrogen		6.22	Mol %	0.01	104	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		75.1	Mol %	0.01	101	70	130			
Ethane		5.87	Mol %	0.01	98	70	130			
Propane		4.79	Mol %	0.01	97	70	130			
Isobutane		1.69	Mol %	0.01	84	70	130			
n-Butane		2.01	Mol %	0.01	100	70	130			
Isopentane		0.98	Mol %	0.01	98	70	130			
n-Pentane		0.91	Mol %	0.01	91	70	130			
Hexanes plus		0.78	Mol %	0.01	98	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B24011072

Login completed by: Addison A. Gilbert
Date Received: 1/23/2024
Reviewed by: ysmith
Received by: CMJ
Reviewed Date: 1/23/2024
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	11.2°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

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CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: **Energy Labs -Billings**	COMPANY: **Energy Laboratories**		PHONE: **(406) 869-6253**	FAX: **(406) 252-6069**	
ADDRESS: **1120 South 27th Street**			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: **Billings, MT 59107**					

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2401851-001B	Influent 1-19-24	TEDLAR	Air	1/19/2024 2:20:00 PM	1	Natual Gas Analysis CO2+02

B240110072

SPECIAL INSTRUCTIONS / COMMENTS:

Include the LAB ID and CLIENT SAMPLE ID on final reports. Email results to Hall.Lab@et.eurofinsus.com. For Questions email Hall.samplecontrol@et.eurofinsus.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 1/20/2024	Time: 9:25 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Crystal Jones	Date: 1/23/24	Time: 0950

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples ____ °C Attempt to Cool ? ____
Comments: ____

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2401851**

08-Feb-24

Client: HILCORP ENERGY

Project: Sunray B1B

Sample ID: **2401851-001adup**	SampType: **DUP**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Influent 1-19-24**	Batch ID: **R102701**	RunNo: **102701**
Prep Date:	Analysis Date: **1/25/2024**	SeqNo: **3794887** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	280	25						5.76	20	
Surr: BFB	24000		10000		238	15	412	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **HILCORP ENERGY** Work Order Number: **2401851** RcptNo: **1**

Received By: **Cheyenne Cason** **1/20/2024 8:05:00 AM**

Completed By: **Cheyenne Cason** **1/20/2024 9:24:03 AM**

Reviewed By: JR 1/22/24

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☐	NA ☑
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: JR 1/22/24

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	NA	Good	Yes	NA		

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Sunray B1B

Project #:

Project Manager: Stuart Hyde

Sampler: D. Burns

On Ice: ☐ Yes ☒ No

# of Coolers: 1

Cooler Temp(including CF): NA (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2401851	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) Full List	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Fixed Gas
1-19-2024	14:20	Air	Inflment 1-19-24	2 Tedlar		001		X						X			X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
1-19-2024	1500				1/19/24	1500
1/19/24	1750	Chris Walls	Cmc courier		1/20/24	0805

Remarks:
cc: dhencmann@ensolum.com
dburns
shyde

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.

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mitch Killough
Hilcorp Energy
PO BOX 4700
Farmington, New Mexico 87499

Generated 3/23/2024 10:03:51 AM

JOB DESCRIPTION

Sunrey B 1B

JOB NUMBER

885-963-1

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
3/23/2024 10:03:51 AM

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

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Laboratory Job ID: 885-963-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

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: Sunrey B 1B

Job ID: 885-963-1

Job ID: 885-963-1 Eurofins Albuquerque

Job Narrative
885-963-1

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 sample was received on 3/12/2024 7:15 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 21.1°C.

Subcontract Work
Method Fixed Gases: This method was subcontracted to Energy Laboratories, Inc. The subcontract laboratory certification is different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

GC/MS VOA
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: Sunrey B 1B

Job ID: 885-963-1

Client Sample ID: SVE-1
Date Collected: 03/06/24 14:45
Date Received: 03/12/24 07:15
Sample Container: Tedlar Bag 1L

Lab Sample ID: 885-963-1
Matrix: Air

Method: SW846 8015D - Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		250		ug/L			03/20/24 14:42	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*03/20/24 14:42*	*50*

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0		ug/L			03/20/24 14:42	50
1,1,1-Trichloroethane	ND		5.0		ug/L			03/20/24 14:42	50
1,1,2,2-Tetrachloroethane	ND		10		ug/L			03/20/24 14:42	50
1,1,2-Trichloroethane	ND		5.0		ug/L			03/20/24 14:42	50
1,1-Dichloroethane	ND		5.0		ug/L			03/20/24 14:42	50
1,1-Dichloroethene	ND		5.0		ug/L			03/20/24 14:42	50
1,1-Dichloropropene	ND		5.0		ug/L			03/20/24 14:42	50
1,2,3-Trichlorobenzene	ND		5.0		ug/L			03/20/24 14:42	50
1,2,3-Trichloropropane	ND		10		ug/L			03/20/24 14:42	50
1,2,4-Trichlorobenzene	ND		5.0		ug/L			03/20/24 14:42	50
1,2,4-Trimethylbenzene	ND		5.0		ug/L			03/20/24 14:42	50
1,2-Dibromo-3-Chloropropane	ND		10		ug/L			03/20/24 14:42	50
1,2-Dibromoethane (EDB)	ND		5.0		ug/L			03/20/24 14:42	50
1,2-Dichlorobenzene	ND		5.0		ug/L			03/20/24 14:42	50
1,2-Dichloroethane (EDC)	ND		5.0		ug/L			03/20/24 14:42	50
1,2-Dichloropropane	ND		5.0		ug/L			03/20/24 14:42	50
1,3,5-Trimethylbenzene	ND		5.0		ug/L			03/20/24 14:42	50
1,3-Dichlorobenzene	ND		5.0		ug/L			03/20/24 14:42	50
1,3-Dichloropropane	ND		5.0		ug/L			03/20/24 14:42	50
1,4-Dichlorobenzene	ND		5.0		ug/L			03/20/24 14:42	50
1-Methylnaphthalene	ND		20		ug/L			03/20/24 14:42	50
2,2-Dichloropropane	ND		10		ug/L			03/20/24 14:42	50
2-Butanone	ND		50		ug/L			03/20/24 14:42	50
2-Chlorotoluene	ND		5.0		ug/L			03/20/24 14:42	50
2-Hexanone	ND		50		ug/L			03/20/24 14:42	50
2-Methylnaphthalene	ND		20		ug/L			03/20/24 14:42	50
4-Chlorotoluene	ND		5.0		ug/L			03/20/24 14:42	50
4-Isopropyltoluene	ND		5.0		ug/L			03/20/24 14:42	50
4-Methyl-2-pentanone	ND		50		ug/L			03/20/24 14:42	50
Acetone	ND		50		ug/L			03/20/24 14:42	50
Benzene	ND		5.0		ug/L			03/20/24 14:42	50
Bromobenzene	ND		5.0		ug/L			03/20/24 14:42	50
Bromodichloromethane	ND		5.0		ug/L			03/20/24 14:42	50
Dibromochloromethane	ND		5.0		ug/L			03/20/24 14:42	50
Bromoform	ND		5.0		ug/L			03/20/24 14:42	50
Bromomethane	ND		15		ug/L			03/20/24 14:42	50
Carbon disulfide	ND		50		ug/L			03/20/24 14:42	50
Carbon tetrachloride	ND		5.0		ug/L			03/20/24 14:42	50
Chlorobenzene	ND		5.0		ug/L			03/20/24 14:42	50
Chloroethane	ND		10		ug/L			03/20/24 14:42	50
Chloroform	ND		5.0		ug/L			03/20/24 14:42	50
Chloromethane	ND		15		ug/L			03/20/24 14:42	50

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

Client Sample ID: SVE-1
Date Collected: 03/06/24 14:45
Date Received: 03/12/24 07:15
Sample Container: Tedlar Bag 1L

Lab Sample ID: 885-963-1
Matrix: Air

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		5.0		ug/L			03/20/24 14:42	50
cis-1,3-Dichloropropene	ND		5.0		ug/L			03/20/24 14:42	50
Dibromomethane	ND		5.0		ug/L			03/20/24 14:42	50
Dichlorodifluoromethane	ND		5.0		ug/L			03/20/24 14:42	50
Ethylbenzene	ND		5.0		ug/L			03/20/24 14:42	50
Hexachlorobutadiene	ND		5.0		ug/L			03/20/24 14:42	50
Isopropylbenzene	ND		5.0		ug/L			03/20/24 14:42	50
Methyl-tert-butyl Ether (MTBE)	ND		5.0		ug/L			03/20/24 14:42	50
Methylene Chloride	ND		15		ug/L			03/20/24 14:42	50
n-Butylbenzene	ND		15		ug/L			03/20/24 14:42	50
N-Propylbenzene	ND		5.0		ug/L			03/20/24 14:42	50
Naphthalene	ND		10		ug/L			03/20/24 14:42	50
sec-Butylbenzene	ND		5.0		ug/L			03/20/24 14:42	50
Styrene	ND		5.0		ug/L			03/20/24 14:42	50
tert-Butylbenzene	ND		5.0		ug/L			03/20/24 14:42	50
Tetrachloroethene (PCE)	ND		5.0		ug/L			03/20/24 14:42	50
Toluene	ND		5.0		ug/L			03/20/24 14:42	50
trans-1,2-Dichloroethene	ND		5.0		ug/L			03/20/24 14:42	50
trans-1,3-Dichloropropene	ND		5.0		ug/L			03/20/24 14:42	50
Trichloroethene (TCE)	ND		5.0		ug/L			03/20/24 14:42	50
Trichlorofluoromethane	ND		5.0		ug/L			03/20/24 14:42	50
Vinyl chloride	ND		5.0		ug/L			03/20/24 14:42	50
Xylenes, Total	ND		7.5		ug/L			03/20/24 14:42	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*03/20/24 14:42*	*50*
Toluene-d8 (Surr)	*95*		*70 - 130*		*03/20/24 14:42*	*50*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*03/20/24 14:42*	*50*
Dibromofluoromethane (Surr)	*95*		*70 - 130*		*03/20/24 14:42*	*50*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

Method: 8015D - Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)

Lab Sample ID: MB 885-2088/3
Matrix: Air
Analysis Batch: 2088

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		50		ug/L			03/20/24 13:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*03/20/24 13:04*	*1*

Lab Sample ID: LCS 885-2088/2
Matrix: Air
Analysis Batch: 2088

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			500	521		ug/L		104			

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 885-2090/3
Matrix: Air
Analysis Batch: 2090

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			03/20/24 13:04	1
1,1,1-Trichloroethane	ND		1.0		ug/L			03/20/24 13:04	1
1,1,2,2-Tetrachloroethane	ND		2.0		ug/L			03/20/24 13:04	1
1,1,2-Trichloroethane	ND		1.0		ug/L			03/20/24 13:04	1
1,1-Dichloroethane	ND		1.0		ug/L			03/20/24 13:04	1
1,1-Dichloroethene	ND		1.0		ug/L			03/20/24 13:04	1
1,1-Dichloropropene	ND		1.0		ug/L			03/20/24 13:04	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			03/20/24 13:04	1
1,2,3-Trichloropropane	ND		2.0		ug/L			03/20/24 13:04	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			03/20/24 13:04	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			03/20/24 13:04	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			03/20/24 13:04	1
1,2-Dibromoethane (EDB)	ND		1.0		ug/L			03/20/24 13:04	1
1,2-Dichlorobenzene	ND		1.0		ug/L			03/20/24 13:04	1
1,2-Dichloroethane (EDC)	ND		1.0		ug/L			03/20/24 13:04	1
1,2-Dichloropropane	ND		1.0		ug/L			03/20/24 13:04	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			03/20/24 13:04	1
1,3-Dichlorobenzene	ND		1.0		ug/L			03/20/24 13:04	1
1,3-Dichloropropane	ND		1.0		ug/L			03/20/24 13:04	1
1,4-Dichlorobenzene	ND		1.0		ug/L			03/20/24 13:04	1
1-Methylnaphthalene	ND		4.0		ug/L			03/20/24 13:04	1
2,2-Dichloropropane	ND		2.0		ug/L			03/20/24 13:04	1
2-Butanone	ND		10		ug/L			03/20/24 13:04	1
2-Chlorotoluene	ND		1.0		ug/L			03/20/24 13:04	1
2-Hexanone	ND		10		ug/L			03/20/24 13:04	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 885-2090/3
Matrix: Air
Analysis Batch: 2090

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		4.0		ug/L			03/20/24 13:04	1
4-Chlorotoluene	ND		1.0		ug/L			03/20/24 13:04	1
4-Isopropyltoluene	ND		1.0		ug/L			03/20/24 13:04	1
4-Methyl-2-pentanone	ND		10		ug/L			03/20/24 13:04	1
Acetone	ND		10		ug/L			03/20/24 13:04	1
Benzene	ND		1.0		ug/L			03/20/24 13:04	1
Bromobenzene	ND		1.0		ug/L			03/20/24 13:04	1
Bromodichloromethane	ND		1.0		ug/L			03/20/24 13:04	1
Dibromochloromethane	ND		1.0		ug/L			03/20/24 13:04	1
Bromoform	ND		1.0		ug/L			03/20/24 13:04	1
Bromomethane	ND		3.0		ug/L			03/20/24 13:04	1
Carbon disulfide	ND		10		ug/L			03/20/24 13:04	1
Carbon tetrachloride	ND		1.0		ug/L			03/20/24 13:04	1
Chlorobenzene	ND		1.0		ug/L			03/20/24 13:04	1
Chloroethane	ND		2.0		ug/L			03/20/24 13:04	1
Chloroform	ND		1.0		ug/L			03/20/24 13:04	1
Chloromethane	ND		3.0		ug/L			03/20/24 13:04	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			03/20/24 13:04	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			03/20/24 13:04	1
Dibromomethane	ND		1.0		ug/L			03/20/24 13:04	1
Dichlorodifluoromethane	ND		1.0		ug/L			03/20/24 13:04	1
Ethylbenzene	ND		1.0		ug/L			03/20/24 13:04	1
Hexachlorobutadiene	ND		1.0		ug/L			03/20/24 13:04	1
Isopropylbenzene	ND		1.0		ug/L			03/20/24 13:04	1
Methyl-tert-butyl Ether (MTBE)	ND		1.0		ug/L			03/20/24 13:04	1
Methylene Chloride	ND		3.0		ug/L			03/20/24 13:04	1
n-Butylbenzene	ND		3.0		ug/L			03/20/24 13:04	1
N-Propylbenzene	ND		1.0		ug/L			03/20/24 13:04	1
Naphthalene	ND		2.0		ug/L			03/20/24 13:04	1
sec-Butylbenzene	ND		1.0		ug/L			03/20/24 13:04	1
Styrene	ND		1.0		ug/L			03/20/24 13:04	1
tert-Butylbenzene	ND		1.0		ug/L			03/20/24 13:04	1
Tetrachloroethene (PCE)	ND		1.0		ug/L			03/20/24 13:04	1
Toluene	ND		1.0		ug/L			03/20/24 13:04	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			03/20/24 13:04	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/20/24 13:04	1
Trichloroethene (TCE)	ND		1.0		ug/L			03/20/24 13:04	1
Trichlorofluoromethane	ND		1.0		ug/L			03/20/24 13:04	1
Vinyl chloride	ND		1.0		ug/L			03/20/24 13:04	1
Xylenes, Total	ND		1.5		ug/L			03/20/24 13:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*03/20/24 13:04*	*1*
Toluene-d8 (Surr)	*89*		*70 - 130*		*03/20/24 13:04*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*03/20/24 13:04*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*03/20/24 13:04*	*1*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 885-2090/2
Matrix: Air
Analysis Batch: 2090

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			20.1	18.1		ug/L		90			
Benzene			20.1	19.7		ug/L		98			
Chlorobenzene			20.1	20.7		ug/L		103			
Toluene			20.2	19.5		ug/L		97			
Trichloroethene (TCE)			20.2	19.2		ug/L		95			

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*95*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
Dibromofluoromethane (Surr)	*98*		*70 - 130*

QC Association Summary

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

GC/MS VOA

Analysis Batch: 2088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-963-1	SVE-1	Total/NA	Air	8015D	
MB 885-2088/3	Method Blank	Total/NA	Air	8015D	
LCS 885-2088/2	Lab Control Sample	Total/NA	Air	8015D	

Analysis Batch: 2090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-963-1	SVE-1	Total/NA	Air	8260B	
MB 885-2090/3	Method Blank	Total/NA	Air	8260B	
LCS 885-2090/2	Lab Control Sample	Total/NA	Air	8260B	

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

Client Sample ID: SVE-1
Date Collected: 03/06/24 14:45
Date Received: 03/12/24 07:15

Lab Sample ID: 885-963-1
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015D		50	2088	CM	EET ALB	03/20/24 14:42
Total/NA	Analysis	8260B		50	2090	CM	EET ALB	03/20/24 14:42

Laboratory References:

= , 1120 South 27th Street, Billings, MT 59107

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

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

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		Air	Gasoline Range Organics [C6 - C10]
8260B		Air	1,1,1,2-Tetrachloroethane
8260B		Air	1,1,1-Trichloroethane
8260B		Air	1,1,2,2-Tetrachloroethane
8260B		Air	1,1,2-Trichloroethane
8260B		Air	1,1-Dichloroethane
8260B		Air	1,1-Dichloroethene
8260B		Air	1,1-Dichloropropene
8260B		Air	1,2,3-Trichlorobenzene
8260B		Air	1,2,3-Trichloropropane
8260B		Air	1,2,4-Trichlorobenzene
8260B		Air	1,2,4-Trimethylbenzene
8260B		Air	1,2-Dibromo-3-Chloropropane
8260B		Air	1,2-Dibromoethane (EDB)
8260B		Air	1,2-Dichlorobenzene
8260B		Air	1,2-Dichloroethane (EDC)
8260B		Air	1,2-Dichloropropane
8260B		Air	1,3,5-Trimethylbenzene
8260B		Air	1,3-Dichlorobenzene
8260B		Air	1,3-Dichloropropane
8260B		Air	1,4-Dichlorobenzene
8260B		Air	1-Methylnaphthalene
8260B		Air	2,2-Dichloropropane
8260B		Air	2-Butanone
8260B		Air	2-Chlorotoluene
8260B		Air	2-Hexanone
8260B		Air	2-Methylnaphthalene
8260B		Air	4-Chlorotoluene
8260B		Air	4-Isopropyltoluene
8260B		Air	4-Methyl-2-pentanone
8260B		Air	Acetone
8260B		Air	Benzene
8260B		Air	Bromobenzene
8260B		Air	Bromodichloromethane
8260B		Air	Bromoform
8260B		Air	Bromomethane
8260B		Air	Carbon disulfide
8260B		Air	Carbon tetrachloride
8260B		Air	Chlorobenzene
8260B		Air	Chloroethane
8260B		Air	Chloroform
8260B		Air	Chloromethane
8260B		Air	cis-1,2-Dichloroethene
8260B		Air	cis-1,3-Dichloropropene
8260B		Air	Dibromochloromethane

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

Laboratory: Eurofins Albuquerque (Continued)

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

Authority	Program	Identification Number	Expiration Date

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
8260B		Air	Dibromomethane
8260B		Air	Dichlorodifluoromethane
8260B		Air	Ethylbenzene
8260B		Air	Hexachlorobutadiene
8260B		Air	Isopropylbenzene
8260B		Air	Methylene Chloride
8260B		Air	Methyl-tert-butyl Ether (MTBE)
8260B		Air	Naphthalene
8260B		Air	n-Butylbenzene
8260B		Air	N-Propylbenzene
8260B		Air	sec-Butylbenzene
8260B		Air	Styrene
8260B		Air	tert-Butylbenzene
8260B		Air	Tetrachloroethene (PCE)
8260B		Air	Toluene
8260B		Air	trans-1,2-Dichloroethene
8260B		Air	trans-1,3-Dichloropropene
8260B		Air	Trichloroethene (TCE)
8260B		Air	Trichlorofluoromethane
8260B		Air	Vinyl chloride
8260B		Air	Xylenes, Total

Oregon	NELAP	NM100001	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		Air	Gasoline Range Organics [C6 - C10]
8260B		Air	1,1,1,2-Tetrachloroethane
8260B		Air	1,1,1-Trichloroethane
8260B		Air	1,1,2,2-Tetrachloroethane
8260B		Air	1,1,2-Trichloroethane
8260B		Air	1,1-Dichloroethane
8260B		Air	1,1-Dichloroethene
8260B		Air	1,1-Dichloropropene
8260B		Air	1,2,3-Trichlorobenzene
8260B		Air	1,2,3-Trichloropropane
8260B		Air	1,2,4-Trichlorobenzene
8260B		Air	1,2,4-Trimethylbenzene
8260B		Air	1,2-Dibromo-3-Chloropropane
8260B		Air	1,2-Dibromoethane (EDB)
8260B		Air	1,2-Dichlorobenzene
8260B		Air	1,2-Dichloroethane (EDC)
8260B		Air	1,2-Dichloropropane
8260B		Air	1,3,5-Trimethylbenzene
8260B		Air	1,3-Dichlorobenzene
8260B		Air	1,3-Dichloropropane
8260B		Air	1,4-Dichlorobenzene

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

Laboratory: Eurofins Albuquerque (Continued)

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

Authority	Program	Identification Number	Expiration Date

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
8260B		Air	1-Methylnaphthalene
8260B		Air	2,2-Dichloropropane
8260B		Air	2-Butanone
8260B		Air	2-Chlorotoluene
8260B		Air	2-Hexanone
8260B		Air	2-Methylnaphthalene
8260B		Air	4-Chlorotoluene
8260B		Air	4-Isopropyltoluene
8260B		Air	4-Methyl-2-pentanone
8260B		Air	Acetone
8260B		Air	Benzene
8260B		Air	Bromobenzene
8260B		Air	Bromodichloromethane
8260B		Air	Bromoform
8260B		Air	Bromomethane
8260B		Air	Carbon disulfide
8260B		Air	Carbon tetrachloride
8260B		Air	Chlorobenzene
8260B		Air	Chloroethane
8260B		Air	Chloroform
8260B		Air	Chloromethane
8260B		Air	cis-1,2-Dichloroethene
8260B		Air	cis-1,3-Dichloropropene
8260B		Air	Dibromochloromethane
8260B		Air	Dibromomethane
8260B		Air	Dichlorodifluoromethane
8260B		Air	Ethylbenzene
8260B		Air	Hexachlorobutadiene
8260B		Air	Isopropylbenzene
8260B		Air	Methylene Chloride
8260B		Air	Methyl-tert-butyl Ether (MTBE)
8260B		Air	Naphthalene
8260B		Air	n-Butylbenzene
8260B		Air	N-Propylbenzene
8260B		Air	sec-Butylbenzene
8260B		Air	Styrene
8260B		Air	tert-Butylbenzene
8260B		Air	Tetrachloroethene (PCE)
8260B		Air	Toluene
8260B		Air	trans-1,2-Dichloroethene
8260B		Air	trans-1,3-Dichloropropene
8260B		Air	Trichloroethene (TCE)
8260B		Air	Trichlorofluoromethane
8260B		Air	Vinyl chloride
8260B		Air	Xylenes, Total

Method Summary

Client: Hilcorp Energy
Project/Site: Sunrey B 1B

Job ID: 885-963-1

Method	Method Description	Protocol	Laboratory
8015D	Nonhalogenated Organics using GC/MS -Modified (Gasoline Range Organics)	SW846	EET ALB
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET ALB
Subcontract	Fixed Gases	None	
5030C	Collection/Prep Tedlar Bag (P&T)	SW846	EET ALB

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= , 1120 South 27th Street, Billings, MT 59107

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

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ANALYTICAL SUMMARY REPORT

March 21, 2024

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B24030786 Quote ID: B15626
Project Name: Sunrey B 1B, 88500415

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 3/13/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24030786-001	SVE-1 (885-963-1)	03/06/24 14:45	03/13/24	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Sunrey B 1B, 88500415
Lab ID: B24030786-001
Client Sample ID: SVE-1 (885-963-1)

Report Date: 03/21/24
Collection Date: 03/06/24 14:45
DateReceived: 03/13/24
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	22.19	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Nitrogen	77.68	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Carbon Dioxide	0.12	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Hexanes plus	0.01	Mol %		0.01		GPA 2261-95	03/15/24 12:27 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	03/15/24 12:27 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	03/15/24 12:27 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	03/15/24 12:27 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	03/15/24 12:27 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	03/15/24 12:27 / jrj
Hexanes plus	0.004	gpm		0.001		GPA 2261-95	03/15/24 12:27 / jrj
GPM Total	0.004	gpm		0.001		GPA 2261-95	03/15/24 12:27 / jrj
GPM Pentanes plus	0.004	gpm		0.001		GPA 2261-95	03/15/24 12:27 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-95	03/15/24 12:27 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-95	03/15/24 12:27 / jrj
Pseudo-critical Pressure, psia	546			1		GPA 2261-95	03/15/24 12:27 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	03/15/24 12:27 / jrj
Specific Gravity @ 60/60F	0.999			0.001		D3588-81	03/15/24 12:27 / jrj
Air, %	101.40			0.01		GPA 2261-95	03/15/24 12:27 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	03/15/24 12:27 / jrj

- BTU, GPM, and specific gravity are corrected for deviation from ideal gas behavior.
- GPM = gallons of liquid at standard conditions per 1000 cu. ft. of moisture free gas @ standard conditions.
- To convert BTU to a water-saturated basis @ standard conditions, multiply by 0.9825.
- Standard conditions: 60 F & 14.73 psi on a dry basis

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B24030786 **Report Date:** 03/21/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R418183
Lab ID: **B24030780-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_240315A				03/15/24 10:40
Oxygen		21.8	Mol %	0.01				0.3	20	
Nitrogen		77.8	Mol %	0.01				0.1	20	
Carbon Dioxide		0.30	Mol %	0.01				0.0	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		<0.01	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		<0.01	Mol %	0.01					20	
n-Butane		<0.01	Mol %	0.01					20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		0.04	Mol %	0.01				0.0	20	
Lab ID: **LCS031524**	11	Laboratory Control Sample				Run: GCNGA-B_240315A				03/18/24 02:59
Oxygen		0.64	Mol %	0.01	128	70	130			
Nitrogen		5.90	Mol %	0.01	98	70	130			
Carbon Dioxide		1.01	Mol %	0.01	102	70	130			
Methane		75.2	Mol %	0.01	101	70	130			
Ethane		5.84	Mol %	0.01	97	70	130			
Propane		5.03	Mol %	0.01	102	70	130			
Isobutane		1.66	Mol %	0.01	83	70	130			
n-Butane		2.00	Mol %	0.01	100	70	130			
Isopentane		0.99	Mol %	0.01	99	70	130			
n-Pentane		0.98	Mol %	0.01	98	70	130			
Hexanes plus		0.77	Mol %	0.01	96	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B24030786

Login completed by: Danielle N. Harris
Date Received: 3/13/2024
Reviewed by: cjones
Received by: DNH
Reviewed Date: 3/15/2024
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	12.4°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

None

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque, NM 87109
Phone: 505-345-3975 Fax: 505-345-4107

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Freeman, Andy	Carrier Tracking No(s):	COC No: 885-118.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: andy.freeman@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Energy Laboratories, Inc.		Accreditations Required (See note): NELAP - Oregon; State - New Mexico		Job #: 885-963-1
Address: 1120 South 27th Street, ,	Due Date Requested: 3/22/2024			
City: Billings	TAT Requested (days):			
State, Zip: MT, 59107				
Phone:	PO #:			
Email:	WO #:			
Project Name: Sunrey B 1B	Project #: 88500415			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Fixed Gases)/ Fixed Gases	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SVE-1 (885-963-1)	3/6/24	14:45 Mountain		Air			X	1	B24030746

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-12-24 15:54				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 3/13/24 0910	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
885-118

Containers

Count	Container Type	Preservative
1	Tedlar Bag 1L	None

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

email or Fax#: brandon.sinclair@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☑ Standard ☐ Rush

Project Name: Sunray B 1B

Project #:

Project Manager: Mitch Killough

Sampler: Brandon Sinclair

On Ice: ☐ Yes ☑ No

# of Coolers: 1

Cooler Temp(including CF): N/A (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

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, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	8015 TVPH	Fixed gas O_2 & CO_2			
3-6	1445	air	SVE-1	2 Tedlar		885-963 COC								✓			✓	✓			

Date:	Time	Relinquished by	Received by	Via	Date	Time	Remarks:
3/11/24	1643			Walk	3/11/24	1643	
3/11/24	1800			courier	3/12/24	7:15	

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: 885-963-1

Login Number: 963 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: Cason, Cheyenne

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.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	False	Thermal preservation not required.
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	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 333291

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 333291
	Action Type: [REPORT] Alternative Remediation Report (C-141AR)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue with O & M schedule. 2. Submit next quarterly report by July 15, 2024.	5/2/2024