



April 11, 2023

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 2023 – SVE System Update

San Juan 28-6 #31
Rio Arriba County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: NVF1816655680

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *First Quarter 2023 – SVE System Update* report summarizing the soil vapor extraction (SVE) system performance at the San Juan 28-6 #31 natural gas production well (Site) located in Unit M, Section 28, Township 28 North, Range 6 West in Rio Arriba County, New Mexico (Figure 1). Specifically, this report summarizes Site activities performed in January, February, and March of 2023 to the New Mexico Oil Conservation Division (NMOCD).

SVE SYSTEM SPECIFICATIONS

The current SVE system consists of a three-phase, 3 horsepower (HP) Ametek Rotron Model EN656 regenerative blower capable of producing 100 standard cubic feet per minute (scfm) of flow and 50 inches of water column (IWC). In total, 19 SVE wells are installed at the site at varying depth intervals in order to induce air flow through the impacted zones in the subsurface. SVE well locations are presented on Figure 2.

FIRST QUARTER 2023 ACTIVITIES

During the first quarter of 2023, Ensolum and Hilcorp personnel performed bi-weekly operation and maintenance (O&M) visits to ensure the system was operating as designed and to perform any required maintenance. Field notes taken during O&M visits are presented in Appendix A. Additionally, the power for the SVE system was converted from generator to a permanent power drop on April 20, 2022. Specifically, the voltage capacity of the power drop at the Site was increased in order to run the SVE system and negate the need for a generator to power the system. This was determined to be necessary based on reliability issues with the generators used at the Site.

Between December 6, 2022 and March 8, 2023, the SVE system operated for 2,204 hours for a runtime efficiency of 99.8 percent (%). Table 1 presents the SVE system operational hours and percent runtime. Appendix B presents photographs of the runtime meter for calculating the first quarter runtime efficiency. During the first quarter 2023, all zones were operating with 15 of the 20 wells operational. SVE wells SVE-6, SVE-7S, SVE-7D, SVE-9, and SVE-15 have been turned off based on the low photoionization detector (PID) readings collected during previous sampling events and in order to achieve higher flow and vacuum rates in the other operating wells.

An air sample for the first quarter 2023 was collected on March 8, 2023. The first quarter 2023 emissions sample was collected from the sample port located between the SVE piping manifold (collected from the total combined air flow from all active wells) and the SVE blower using a high vacuum air sampler. Prior to collection, the emissions sample was field screened with a PID for organic vapor monitoring (OVM). The emissions sample was collected directly into two 1-Liter Tedlar® bags and submitted to Hall Environmental Analysis Laboratory (Hall), located in Albuquerque, New Mexico, for analysis of total volatile petroleum hydrocarbons (TVPH, also referred to as total petroleum hydrocarbons – gasoline range organics (TPH-GRO)) following United States Environmental Protection Agency (EPA) Method 8015D, volatile organic compounds (VOCs) following EPA Method 8260B, and fixed gas analysis of oxygen and carbon dioxide following Gas Processor Association (GPA) Method 2261. Table 2 presents a summary of analytical data collected during this and previous sampling events, with the full laboratory analytical report included in Appendix C.

Emission sample data and measured stack flow rates are used to estimate total mass recovered and total emissions generated by the SVE systems (Table 3). Based on these estimates, a total of 19,548 pounds (9.8 tons) of TVPH have been removed by the system to date.

RECOMMENDATIONS

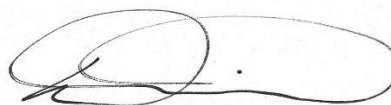
Bi-weekly O&M visits will continue to be performed by Ensolum and/or Hilcorp personnel to ensure that the SVE system is operating within normal working ranges (i.e., temperature, pressure, and vacuum). Deviations from regular operations will be noted on field logs and included in the following quarterly report. Hilcorp will continue operating the SVE until asymptotic emissions are observed. At that time, an evaluation of residual petroleum hydrocarbons will be assessed and further recommendations for remedial actions, if any, will be provided to NMOCD.

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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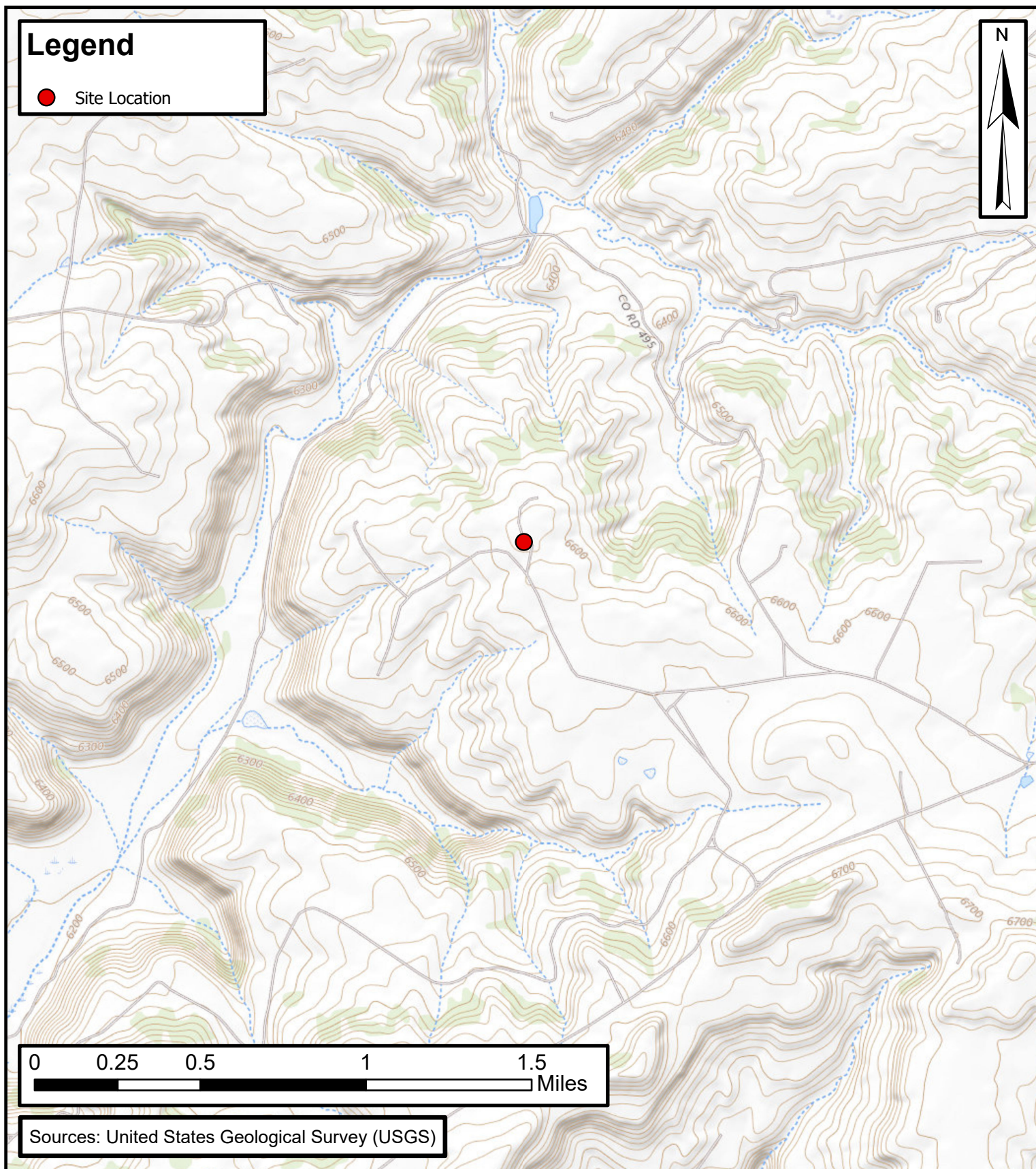
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Attachments:

Figure 1	Site Location
Figure 2	SVE System Configuration
Table 1	Soil Vapor Extraction System Runtime Calculations
Table 2	Soil Vapor Extraction System Air Analytical Results
Table 3	Soil Vapor Extraction System Mass Removal and Emissions
Appendix A	Field Notes
Appendix B	Project Photographs
Appendix C	Laboratory Analytical Reports



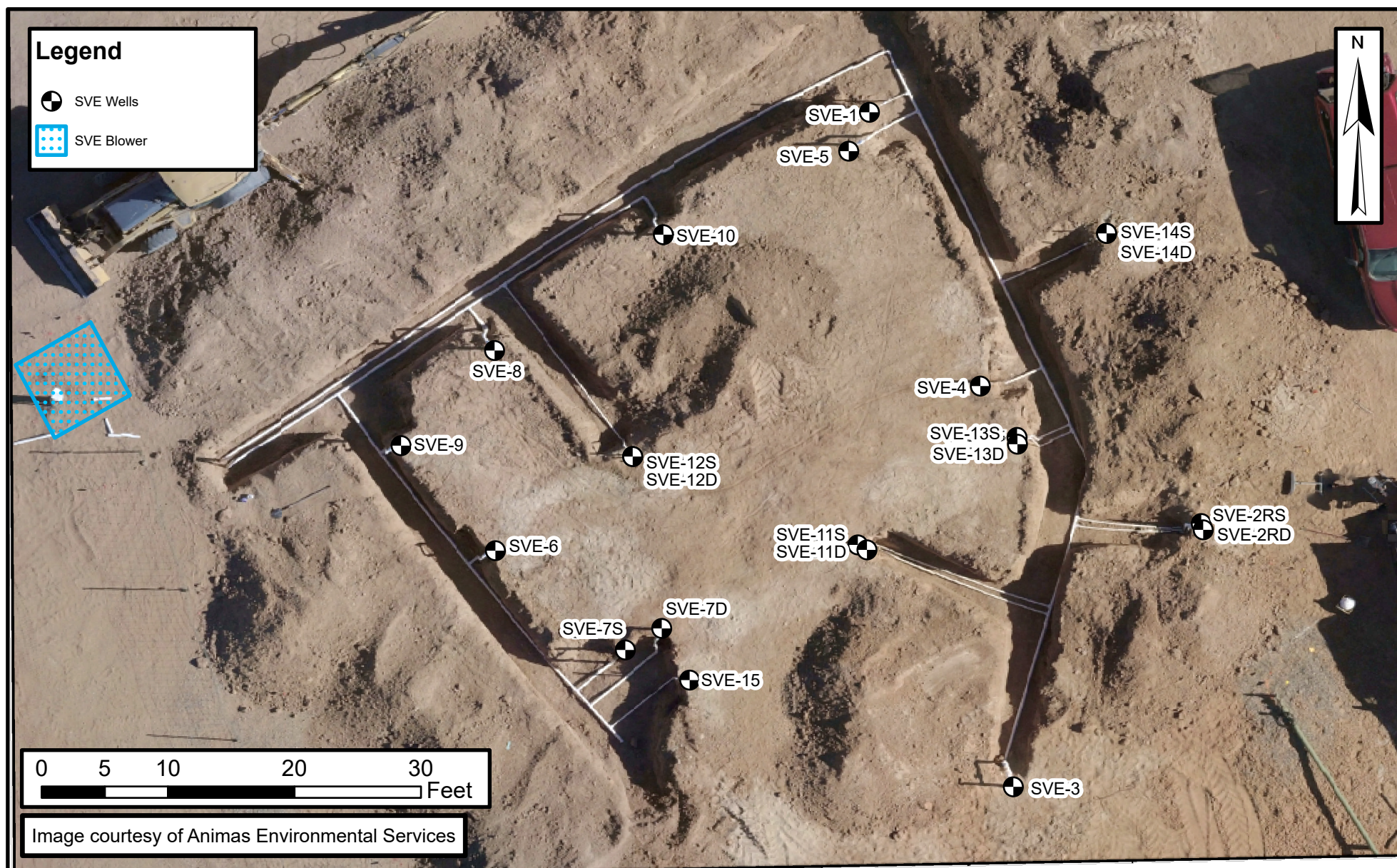
FIGURES



Site Location Map

San Juan 28-6 #31
Hilcorp Energy Company
36.6277°N, -107.4781°W
Rio Arriba County, NM

FIGURE
1



SVE System Configuration

San Juan 28-6 #31
Hilcorp Energy Company
36.6277° N, -107.4781° W
Rio Arriba County, NM

FIGURE
2



TABLES



TABLE 1
SOIL VAPOR EXTRACTION SYSTEM RUNTIME CALCULATIONS
San Juan 28-6 #31
Hilcorp Energy Company
Rio Arriba County, New Mexico

Date	SVE Runtime Hours (1)	Delta Hours	Days	% Runtime
12/6/2022	7,267	--	--	--
3/8/2023	9,471	2,204	92	99.8%



TABLE 2
SOIL VAPOR EXTRACTION SYSTEM EMISSIONS ANALYTICAL RESULTS
 San Juan 28-6 #31
 Hilcorp Energy Company
 Rio Arriba County, New Mexico

Date	Sample Identification	Operating SVE Zones	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH/GRO (µg/L)	Oxygen (%)	Carbon Dioxide (%)
9/20/2021	Pilot Test	All Zones	1,287	720	1,600	15	320	250,000	17.87%	2.05%
9/28/2021	Influent A+B	All Zones	736	240	720	27	350	53,000	---	---
10/21/2021	Influent A+B	All Zones	615	60	170	6.7	74	13,000	---	---
11/5/2021	Leg A Deep	Leg A Deep	1,177	620	1,700	29	390	72,000	---	---
12/16/2021	Leg A Deep	Leg A Deep	1,398	470	950	11	190	96,000	21.00%	0.83%
12/16/2021	Leg A Shallow	Leg A Shallow	298	10	32	1.1	19	2,300	22.00%	0.12%
1/6/2022	Leg A Shallow	Leg A Shallow	283	12	34	1.2	15	2,500	22.13%	0.13%
1/6/2022	Leg B-1	Leg B-1	158	2.3	10	<0.50	6.7	1,100	21.97%	0.10%
3/24/2022	Influent All Wells	All Zones	604	48	92	1.2	19	6,300	22.10%	0.18%
6/13/2022	Influent All Wells	All Zones	414	30	89	<2.0	29	4,600	21.57%	0.25%
9/30/2022	Influent 9-30	All Zones	410	19	65	2.1	26	3,700	21.57%	0.28%
12/6/2022	SVE-1	All Zones	284	85	220	<5.0	58	22,000	21.69%	0.23%
3/8/2023	SVE-1	All Zones	381	13	54	<5.0	16	52	21.66%	0.19%

Notes:

GRO: gasoline range hydrocarbons

µg/L: microgram per liter

PID: photoionization detector

ppm: parts per million

TVPH: total volatile petroleum hydrocarbons

%: percent

---: not sampled/analyzed

<0.037: gray indicates result less than the stated laboratory reporting limit (RL)



TABLE 3
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS

San Juan 28-6 #31
Hilcorp Energy Company
Rio Arriba County, New Mexico

Flow and Laboratory Analysis

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)
9/28/2021	736	240	720	27	350	53,000
10/21/2021	615	60	170	6.7	74	13,000
11/5/2021	1,177	620	1,700	29	390	72,000
12/16/2021	298	10	32	1.1	19	2,300
1/6/2022	158	2.3	10	0.50	6.7	1,100
3/24/2022	604	48	92	1.2	19	6,300
6/13/2022	414	30	89	2.0	29	4,600
9/30/2022 (1)	410	19	65	2.1	26	3,700
12/6/2022	284	85	220	5.0	58	22,000
3/8/2023	381	13	54	5.0	16	52
Average	508	113	315	8.0	99	17,805

Vapor Extraction Summary

Date	Flow Rate (cfm)	Total System Flow (cf)	Delta Flow (cf)	Benzene (lb/hr)	Toluene (lb/hr)	Ethylbenzene (lb/hr)	Total Xylenes (lb/hr)	TVPH (lb/hr)
9/28/2021	60	17,280	17,280	0.054	0.16	0.0061	0.079	12
10/21/2021	50	1,648,680	1,631,400	0.028	0.083	0.0032	0.040	6.2
11/5/2021	8	1,864,392	215,712	0.010	0.028	0.00053	0.0069	1.3
12/16/2021	12	2,496,696	632,304	0.014	0.039	0.00068	0.0092	1.7
1/6/2022	32	3,352,056	855,360	0.00072	0.0025	0.000096	0.0015	0.20
3/24/2022	12	4,610,688	1,258,632	0.0011	0.0023	0.000038	0.00058	0.17
6/13/2022	61	11,659,482	7,048,794	0.0089	0.021	0.00037	0.0055	1.2
9/19/2022 (1)	52	18,819,882	7,160,400	0.0048	0.015	0.00040	0.0053	0.81
12/6/2022	55	24,971,082	6,151,200	0.011	0.029	0.00073	0.0086	2.6
3/8/2023	50	31,583,082	6,612,000	0.0092	0.026	0.00094	0.0069	2.1
Average				0.014	0.041	0.0013	0.016	2.8

Flow and Laboratory Analysis

Date	Total Operational Hours (2)	Delta Hours	Benzene (pounds)	Toluene (pounds)	Ethylbenzene (pounds)	Total Xylenes (pounds)	TVPH (pounds)	TVPH (tons)
9/28/2021	5	5	0.26	0.78	0.029	0.4	57	0.029
10/21/2021	549	544	15	45	1.7	21.6	3,356	1.7
11/9/2021 (3)	998	449	4.6	13	0.24	3.1	571	0.29
12/16/2021	1,876	878	12	34	0.59	8.1	1,464	0.73
1/6/2022	2,322	446	0.32	1.1	0.043	0.7	91	0.045
3/24/2022	4,070	1,748	2.0	4.0	0.067	1.0	290	0.15
6/13/2022	5,996	1,926	17	40	0.70	11	2,395	1.2
9/19/2022 (1)	8,291	2,295	11	34	0.9	12	1,852	0.93
12/6/2022	10,155	1,864	20	55	1.4	16	4,927	2.5
3/8/2023	12,359	2,204	20	56	2.1	15	4,544	2.3
Total Mass Recovery to Date			103	283	7.7	89	19,548	9.8

Notes:

(1): an emissions air sample was recollected on 9/30/2022 due to air-collection errors during the 9/19/2022 site visit. Flow rates collected during the 9/19/2022 visit are used for emissions calculations

(2): total operational hours are a summation of runtime hours collected from several generators and blower runtime meters used between 9/28/2021 and 9/19/2022

(3): runtime hours collected during a site visit on 11/9/2021

cfm: cubic feet per minute

µg/L: micrograms per liter

lb/hr: pounds per hour

--: not sampled

PID: photoionization detector

ppm: parts per million

TVPH: total volatile petroleum hydrocarbons

gray: laboratory reporting limit used for calculating emissions



APPENDIX A

Field Notes

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORMDATE: 1-5-22
TIME ONSITE: _____O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: _____ KO TANK HIGH LEVEL _____

GENERATOR

Hours (take photo) _____
Hertz _____
Voltage _____
Battery Voltage _____
Oil Pressure _____
Oil Temp _____

SVE SYSTEM

Blower Hours (take photo) _____
Pre K/O Vacuum (IWC) _____
Post K/O Vacuum (IWC) _____
Pitot Tube 3" Flow (cfm) _____
Leg A Rotameter (scfm) _____
Leg B Rotameter (scfm) _____
Inlet PID _____
Exhaust Post GAC PID _____
Liquid in K/O Sight Tube (Y/N) _____
K/O Liquid Drained (gallons) _____

READING

TIME

798.2.6	1217
-36	
-30	
52	
28	
25	
221.1	
419.6	

HOUSEKEEPING Check

Generator Lubrication _____
Inline Filter Clean _____
Clean Wye Strainer _____

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID:

SAMPLE TIME:

Analytes: TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)

OPERATING WELLS

ZONES

Change in Well Operation: _____

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		922.5	
SVE-3		391.9	
SVE-5		996.2	
SVE-11D		1214	
SVE-13D		1219	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		62.5	
SVE-2RS		548.3	
SVE-4		388.9	
SVE-11S		343.7	
SVE-13S		1233	
SVE-14S		1631	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		168.8	
SVE-12S		1161	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		14.03	
SVE-9			

COMMENTS/OTHER MAINTENANCE: _____

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORMDATE: 1-24
TIME ONSITE: _____O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: _____ KO TANK HIGH LEVEL

GENERATOR

Hours (take photo) _____
Hertz _____
Voltage _____
Battery Voltage _____
Oil Pressure _____
Oil Temp _____

SVE SYSTEM

	READING	TIME
Blower Hours (take photo)	8443.1	1231
Pre K/O Vacuum (IWC)	-38	
Post K/O Vacuum (IWC)	-32	
Pitot Tube 3" Flow (cfm)	50	
Leg A Rotameter (scfm)	28	
Leg B Rotameter (scfm)	22	
Inlet PID	230.6	
Exhaust Post GAC PID	586.7	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquid Drained (gallons)		

HOUSEKEEPING Check

Generator Lubrication _____
Inline Filter Clean _____
Clean Wye Strainer _____

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: _____

SAMPLE TIME: _____

Analytes: TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)

OPERATING WELLS _____

ZONES

Change in Well Operation: _____

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		928.2	
SVE-3		976.1	
SVE-5		1267	
SVE-11D		1202	
SVE-13D		1478	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		77.9	
SVE-2RS		1103	
SVE-4		673.2	
SVE-11S		88.96	
SVE-13S		1321	
SVE-14S		1700	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		224.2	
SVE-12S		753.9	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		*	
SVE-9			

COMMENTS/OTHER MAINTENANCE:

* no pressure/suction

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORMDATE: 2-1-23
TIME ONSITE: _____O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: _____ KO TANK HIGH LEVEL

GENERATOR

Hours (take photo) _____

Hertz _____

Voltage _____

Battery Voltage _____

Oil Pressure _____

Oil Temp _____

SVE SYSTEM

Blower Hours (take photo) _____

Pre K/O Vacuum (IWC) _____

Post K/O Vacuum (IWC) _____

Pitot Tube 3" Flow (cfm) _____

Leg A Rotameter (scfm) _____

Leg B Rotameter (scfm) _____

Inlet PID _____

Exhaust Post GAC PID _____

Liquid in K/O Sight Tube (Y/N) _____

K/O Liquid Drained (gallons) _____

READING

TIME

8634.8

1214

-37

-32

53

28

21

245.6

433.1

HOUSEKEEPING Check

Generator Lubrication _____

Inline Filter Clean _____

Clean Wye Strainer _____

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: _____

SAMPLE TIME: _____

Analytes: TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)

OPERATING WELLS _____

ZONES

Change in Well Operation: _____

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		907.2	
SVE-3		380	
SVE-5		1001	
SVE-11D		1137	
SVE-13D		1265	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		95.56	
SVE-2RS		658.9	
SVE-4		383.8	
SVE-11S		374.8	
SVE-13S		1209	
SVE-14S		1401	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		202.4	
SVE-12S		1417	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S		27.74	
SVE-8			
SVE-9			

COMMENTS/OTHER MAINTENANCE: _____

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORMDATE: 2-23
TIME ONSITE: _____O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: _____ KO TANK HIGH LEVEL

GENERATOR

Hours (take photo) _____

Hertz _____

Voltage _____

Battery Voltage _____

Oil Pressure _____

Oil Temp _____

SVE SYSTEM

READING

TIME

Blower Hours (take photo) 9162 1127Pre K/O Vacuum (IWC) -34Post K/O Vacuum (IWC) -33Pitot Tube 3" Flow (cfm) 50Leg A Rotameter (scfm) 25Leg B Rotameter (scfm) 19-26Inlet PID 397.7Exhaust Post GAC PID 605.4

Liquid in K/O Sight Tube (Y/N) _____

K/O Liquid Drained (gallons) _____

HOUSEKEEPING Check

Generator Lubrication _____

Inline Filter Clean _____

Clean Wye Strainer _____

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: _____

SAMPLE TIME: _____

Analytes: TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)

OPERATING WELLS _____

ZONES

Change in Well Operation: _____

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		<u>1843</u>	
SVE-3		<u>319.7</u>	
SVE-5		<u>1828</u>	
SVE-11D		<u>1842</u>	
SVE-13D		<u>2765</u>	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		<u>169.7</u>	
SVE-2RS		<u>803.2</u>	
SVE-4		<u>1121</u>	
SVE-11S		<u>248.8</u>	
SVE-13S		<u>2351</u>	
SVE-14S		<u>3353</u>	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		<u>239.4</u>	
SVE-12S		<u>3374</u>	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		<u>78.4</u>	
SVE-9			

COMMENTS/OTHER MAINTENANCE: _____

28-6 #31 SVE SYSTEM
BIWEEKLY O&M FORMDATE: 3-8-23
TIME ONSITE: _____O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: _____ KO TANK HIGH LEVEL

GENERATOR

Hours (take photo) _____
Hertz _____
Voltage _____
Battery Voltage _____
Oil Pressure _____
Oil Temp _____

SVE SYSTEM

Blower Hours (take photo) _____
Pre K/O Vacuum (IWC) _____
Post K/O Vacuum (IWC) _____
Pitot Tube 3" Flow (cfm) _____
Leg A Rotameter (scfm) _____
Leg B Rotameter (scfm) _____
Inlet PID _____
Exhaust Post GAC PID _____
Liquid in K/O Sight Tube (Y/N) _____
K/O Liquid Drained (gallons) _____

READING

TIME

9471.2

1121

-36

-31

50

25

22

381.6

833.1

HOUSEKEEPING Check

Generator Lubrication _____

Inline Filter Clean _____

Clean Wye Strainer _____

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: _____

SAMPLE TIME: _____

Analytes: TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)

OPERATING WELLS _____

ZONES

Change in Well Operation: _____

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1980	
SVE-3		337.4	
SVE-5		1998	
SVE-11D		2616	
SVE-13D		2902	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		129.5	
SVE-2RS		669.2	
SVE-4		812.6	
SVE-11S		418	
SVE-13S		2964	
SVE-14S		1799	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10			
SVE-12S		188.3	
SVE-15		553.3	

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8			
SVE-9		40.1	

COMMENTS/OTHER MAINTENANCE:

Took air samples.

28-6 #31 SVE SYSTEM BIWEEKLY O&M FORM

DATE: 3-31
TIME ONSITE: _____

O&M PERSONNEL: B Sinclair
TIME OFFSITE: _____

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: _____ KO TANK HIGH LEVEL _____

GENERATOR

Hours (take photo) _____
Hertz _____
Voltage _____
Battery Voltage _____
Oil Pressure _____
Oil Temp _____

SVE SYSTEM

Blower Hours (take photo) _____
Pre K/O Vacuum (IWC) _____
Post K/O Vacuum (IWC) _____
Pitot Tube 3" Flow (cfm) _____
Leg A Rotameter (scfm) _____
Leg B Rotameter (scfm) _____
Inlet PID _____
Exhaust Post GAC PID _____
Liquid in K/O Sight Tube (Y/N) _____
K/O Liquid Drained (gallons) _____

READING	TIME
10022	1159
-38	
-31	
40	
25	
25	
370.5	
667.4	

HOUSEKEEPING Check

Generator Lubrication _____
Inline Filter Clean _____
Clean Wye Strainer _____

SVE SYSTEM - QUARTERLY SAMPLING

SAMPLE ID: _____

SAMPLE TIME: _____

Analytes: TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)

OPERATING WELLS _____

ZONES

Change in Well Operation: _____

LEG A DEEP

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1785	
SVE-3		892	
SVE-5		1561	
SVE-11D		2231	
SVE-13D		2900	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		304.8	
SVE-2RS		1398	
SVE-4		987.2	
SVE-11S		1136	
SVE-13S		2354	
SVE-14S		1812	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		200.6	
SVE-12S		1055	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S		73.1	
SVE-8			
SVE-9			

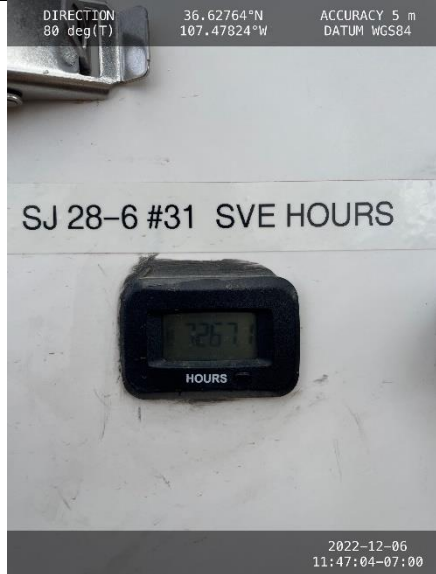
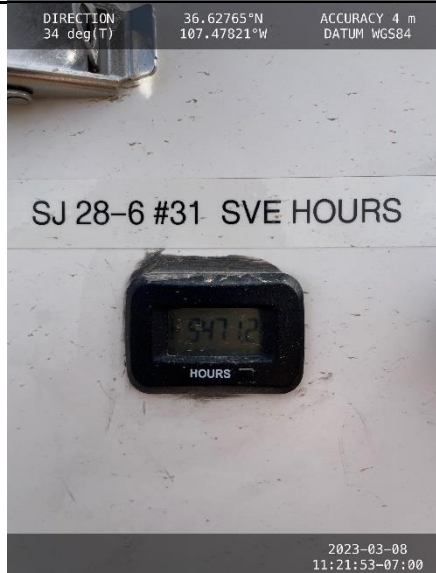
COMMENTS/OTHER MAINTENANCE: _____



APPENDIX B

Project Photographs

PROJECT PHOTOGRAPHS
San Juan 28-6 #31
San Juan County, New Mexico
Hilcorp Energy Company

Photograph 1 Runtime meter taken on December 6, 2022 at 11:47 AM Hours = 7,267.1	
Photograph 2 Runtime meter taken on March 8, 2023 at 11:21 AM Hours = 9,471.2	



APPENDIX C

Laboratory Analytical Reports



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 27, 2023

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

RE: SJ 28 6 Unit 31

OrderNo.: 2303503

Dear Samantha Grabert:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/9/2023 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 don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2303503

Date Reported: 3/27/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SVE-1

Project: SJ 28 6 Unit 31

Collection Date: 3/8/2023 11:20:00 AM

Lab ID: 2303503-001

Matrix: AIR

Received Date: 3/9/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: CCM
Benzene	13	5.0		µg/L	50	3/9/2023 1:57:00 PM
Toluene	54	5.0		µg/L	50	3/9/2023 1:57:00 PM
Ethylbenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Naphthalene	ND	10		µg/L	50	3/9/2023 1:57:00 PM
1-Methylnaphthalene	ND	20		µg/L	50	3/9/2023 1:57:00 PM
2-Methylnaphthalene	ND	20		µg/L	50	3/9/2023 1:57:00 PM
Acetone	ND	50		µg/L	50	3/9/2023 1:57:00 PM
Bromobenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Bromodichloromethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Bromoform	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Bromomethane	ND	10		µg/L	50	3/9/2023 1:57:00 PM
2-Butanone	ND	50		µg/L	50	3/9/2023 1:57:00 PM
Carbon disulfide	ND	50		µg/L	50	3/9/2023 1:57:00 PM
Carbon tetrachloride	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Chlorobenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Chloroethane	ND	10		µg/L	50	3/9/2023 1:57:00 PM
Chloroform	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Chloromethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
2-Chlorotoluene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
4-Chlorotoluene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
cis-1,2-DCE	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	3/9/2023 1:57:00 PM
Dibromochloromethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Dibromomethane	ND	10		µg/L	50	3/9/2023 1:57:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,3-Dichloropropane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
2,2-Dichloropropane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative 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

Page 1 of 2

Analytical Report

Lab Order 2303503

Date Reported: 3/27/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SVE-1

Project: SJ 28 6 Unit 31

Collection Date: 3/8/2023 11:20:00 AM

Lab ID: 2303503-001

Matrix: AIR

Received Date: 3/9/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: CCM
1,1-Dichloropropene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Hexachlorobutadiene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
2-Hexanone	ND	50		µg/L	50	3/9/2023 1:57:00 PM
Isopropylbenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
4-Isopropyltoluene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
4-Methyl-2-pentanone	ND	50		µg/L	50	3/9/2023 1:57:00 PM
Methylene chloride	ND	15		µg/L	50	3/9/2023 1:57:00 PM
n-Butylbenzene	ND	15		µg/L	50	3/9/2023 1:57:00 PM
n-Propylbenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
sec-Butylbenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Styrene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
tert-Butylbenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
trans-1,2-DCE	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Trichloroethene (TCE)	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
1,2,3-Trichloropropane	ND	10		µg/L	50	3/9/2023 1:57:00 PM
Vinyl chloride	ND	5.0		µg/L	50	3/9/2023 1:57:00 PM
Xylenes, Total	16	7.5		µg/L	50	3/9/2023 1:57:00 PM
Surr: Dibromofluoromethane	88.0	70-130		%Rec	50	3/9/2023 1:57:00 PM
Surr: 1,2-Dichloroethane-d4	84.9	70-130		%Rec	50	3/9/2023 1:57:00 PM
Surr: Toluene-d8	103	70-130		%Rec	50	3/9/2023 1:57:00 PM
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	50	3/9/2023 1:57:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	52	5.0		µg/L	1	3/9/2023 1:57:00 PM
Surr: BFB	97.7	70-130		%Rec	1	3/9/2023 1:57:00 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative 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

Page 2 of 2



ANALYTICAL SUMMARY REPORT

March 24, 2023

Hall Environmental

4901 Hawkins St NE Ste D

Albuquerque, NM 87109-4372

Work Order: B23030763

Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 3/10/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23030763-001	2303503-001B, SVE-1	03/08/23 11:20	03/10/23	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:



Trust our People. Trust our Data.
www.energylab.com

Billings, MT 800.735.4489 • Casper, WY 888.235.0515
Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B23030763-001
Client Sample ID: 2303503-001B, SVE-1

Report Date: 03/24/23
Collection Date: 03/08/23 11:20
Date Received: 03/10/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.66	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Nitrogen	77.96	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Carbon Dioxide	0.19	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Methane	<0.01	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Ethane	<0.01	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Propane	<0.01	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Hexanes plus	0.19	Mol %		0.01		GPA 2261-95	03/15/23 09:00 / ikc
Propane	< 0.001	gpm		0.001		GPA 2261-95	03/15/23 09:00 / ikc
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	03/15/23 09:00 / ikc
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	03/15/23 09:00 / ikc
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	03/15/23 09:00 / ikc
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	03/15/23 09:00 / ikc
Hexanes plus	0.080	gpm		0.001		GPA 2261-95	03/15/23 09:00 / ikc
GPM Total	0.080	gpm		0.001		GPA 2261-95	03/15/23 09:00 / ikc
GPM Pentanes plus	0.080	gpm		0.001		GPA 2261-95	03/15/23 09:00 / ikc

CALCULATED PROPERTIES

Gross BTU per cu ft @ Std Cond. (HHV)	9		1		GPA 2261-95	03/15/23 09:00 / ikc
Net BTU per cu ft @ std cond. (LHV)	8		1		GPA 2261-95	03/15/23 09:00 / ikc
Pseudo-critical Pressure, psia	545		1		GPA 2261-95	03/15/23 09:00 / ikc
Pseudo-critical Temperature, deg R	240		1		GPA 2261-95	03/15/23 09:00 / ikc
Specific Gravity @ 60/60F	1.00		0.001		D3588-81	03/15/23 09:00 / ikc
Air, %	98.95		0.01		GPA 2261-95	03/15/23 09:00 / ikc

- The analysis was not corrected for air.

COMMENTS

-	-	03/15/23 09:00 / ikc
- 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: B23030763

Report Date: 03/24/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: GPA 2261-95									Batch: R398983	
Lab ID: B23030934-001ADUP 12 Sample Duplicate									Run: GCNGA-B_230315A 03/15/23 12:58	
Oxygen		21.2	Mol %	0.01				0	20	
Nitrogen		78.2	Mol %	0.01				0.0	20	
Carbon Dioxide		0.55	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	
Lab ID: LCS031523 11 Laboratory Control Sample									Run: GCNGA-B_230315A 03/15/23 13:25	
Oxygen		0.61	Mol %	0.01	122	70	130			
Nitrogen		5.94	Mol %	0.01	99	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.9	Mol %	0.01	100	70	130			
Ethane		5.95	Mol %	0.01	99	70	130			
Propane		4.94	Mol %	0.01	100	70	130			
Isobutane		1.95	Mol %	0.01	97	70	130			
n-Butane		1.95	Mol %	0.01	97	70	130			
Isopentane		0.99	Mol %	0.01	99	70	130			
n-Pentane		0.99	Mol %	0.01	99	70	130			
Hexanes plus		0.80	Mol %	0.01	100	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

Work Order Receipt Checklist

Hall Environmental

B23030763

Login completed by: Yvonna E. Smith

Date Received: 3/10/2023

Reviewed by: Icadreau

Received by: kkw

Reviewed Date: 3/15/2023

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	12.8°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

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.

Contact and Corrective Action Comments:

None



CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRACTOR: 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
1	2303503-001B SVE-1		TEDLAR	Air	3/8/2023 11:20:00 AM
					# CONTAINERS
					1
					FIXED GASES
ANALYTICAL COMMENTS B23030703					

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 3/9/2023	Time: 9:27 AM	Received By:	Date: 3/19/23	Time: 09:25
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
TAT: <input checked="" type="radio"/> Standard <input type="radio"/> RUSH		Next BD <input type="checkbox"/>		2nd BD <input type="checkbox"/>	3rd BD <input type="checkbox"/>
REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE					
FOR LAB USE ONLY					
Temp of samples _____ °C				Attempt to Cool? _____	
Comments: _____					



Hall Environmental Analysis Laboratory
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: 2303503

RcptNo: 1

Received By: Tracy Casarrubias 3/9/2023 7:15:00 AM

Completed By: Tracy Casarrubias 3/9/2023 9:24:13 AM

Reviewed By: *JA 3-9-23*

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 $>0^{\circ}\text{C}$ 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: *JA 3/9/23*

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: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	N/A	Good	Yes			

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:

SJ 286 Unit 31

Project #:

Project Manager:

Samantha GrabertSampler: Brandon SinclairOn Ice: ☒ Yes ☐ No# of Coolers: 1Cooler Temp (including CF): N/A (°C)

Container Type and #

2 Tedlar

Preservative Type

HEAL No.

2303503001

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, NO₃, NO₂, PO₄, SO₄

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

8015 TPH

Fixed gases O₂, CO₂

Remarks:

Received by: John W... Date: 3/8/23 Time: 10:33Received by: Via Courier Date: 3/19/23 Time: 7:15

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 207384

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 207384
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue with O & M schedule. 2. Submit next quarterly report by July 31, 2023.	5/11/2023