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July 12, 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: Second 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 *Second 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 April, May, and June 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. 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.

**SECOND QUARTER 2023 ACTIVITIES**

During the second 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. Between March 8 and June 22, 2023, the SVE system operated for 2,533 hours for a runtime efficiency of 99.6 percent (%). Table 1 presents the SVE system operational hours and percent runtime. Appendix B presents photographs of the runtime meter for calculating the second quarter runtime efficiency. During the second 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 second quarter 2023 was collected on June 22, 2023. The second 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 20,343 pounds (10.2 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**

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

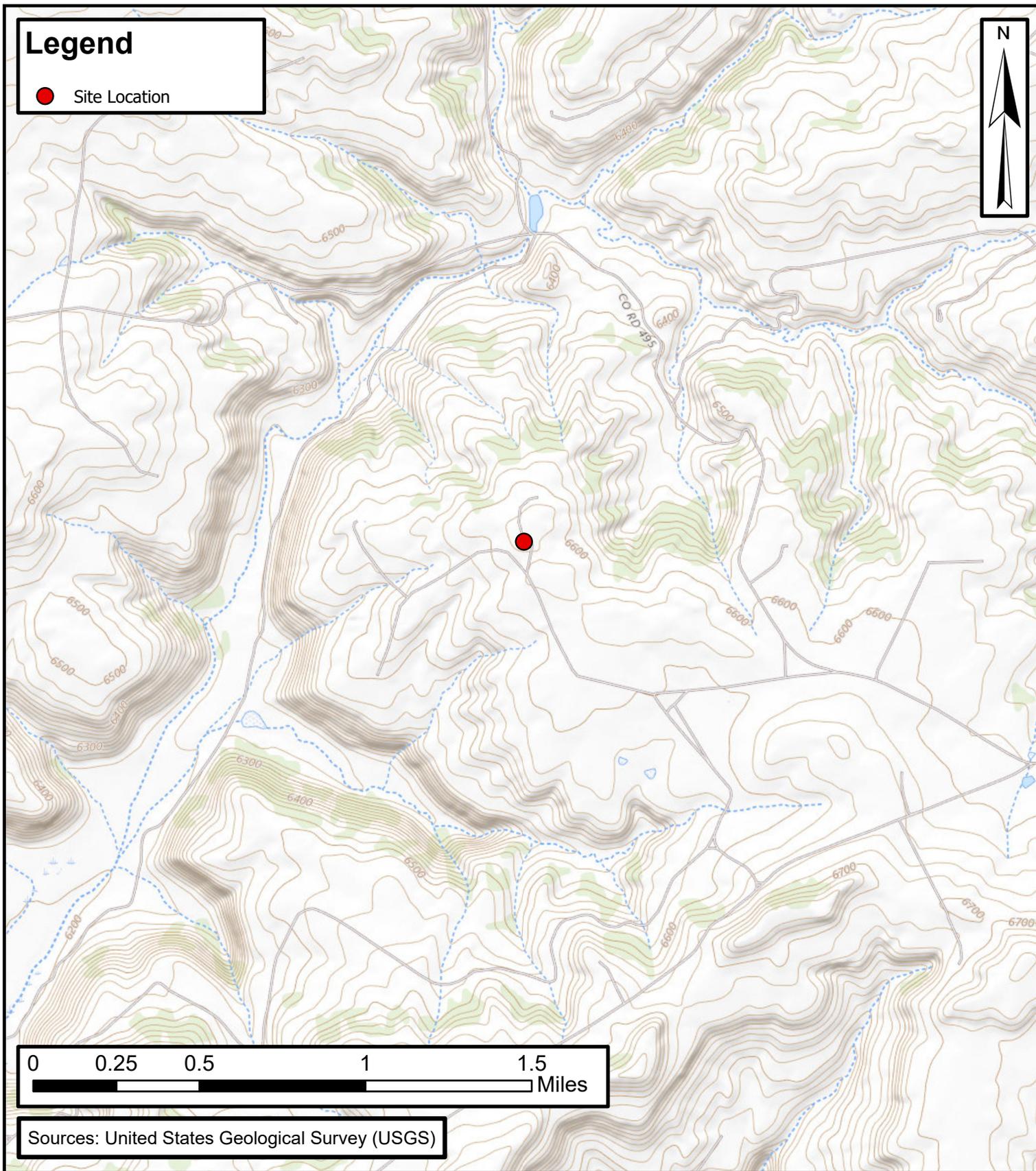
Daniel R. Moir, MS, PG  
Senior Managing Geologist  
(303) 887-2946  
dmoir@ensolum.com

**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

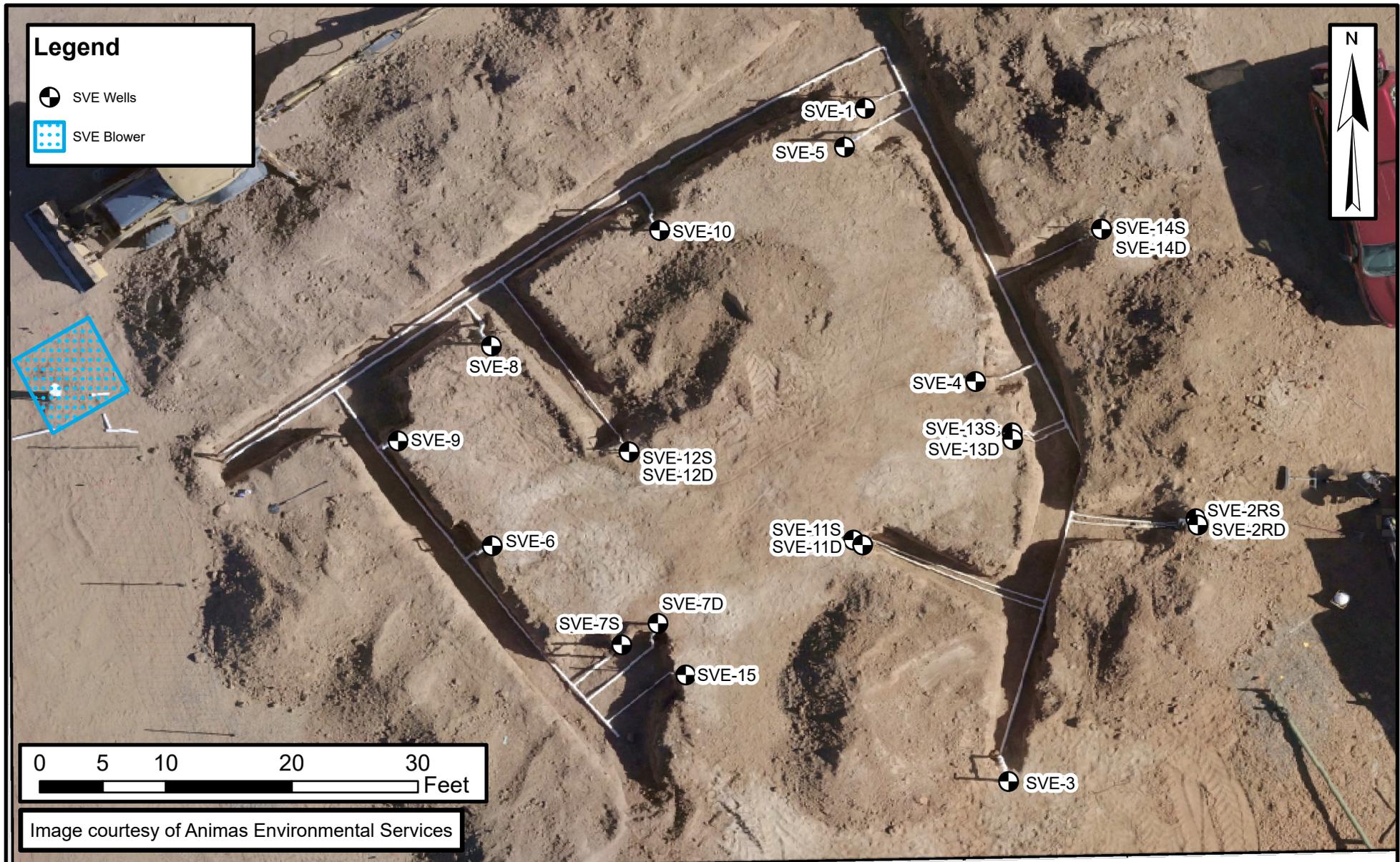


**ENSOLUM**  
Environmental & Hydrogeologic Consultants

### 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	Delta Hours	Days	% Runtime
3/8/2023	9,471	--	--	--
6/22/2023	12,004	2,533	106	99.6%



**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%
6/22/2023	SVE-1	All Zones	356	8.4	39	1.2	17	3,000	21.66%	0.20%

**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

<: 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
6/22/2023	356	8.4	39	1.2	17	3,000
<b>Average</b>	494	103	290	7.3	91	16,459

**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	0.0256	0.0009	0.0069	2.0619
6/22/2023	55	39,941,982	8,358,900	0.0022	0.0096	0.0006	0.0034	0.3139
<b>Average</b>				0.013	0.038	0.001	0.015	2.586

**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	15	4,544	2.3
6/22/2023	14,892	2,533	6	24	2	9	795	0.4
<b>Total Mass Recovery to Date</b>			109	307	9.3	98	20,343	10.2

**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 FORM**

DATE: 4-13  
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)	10333	1125
Pre K/O Vacuum (IWC)	-35	
Post K/O Vacuum (IWC)	-29	
Pitot Tube 3" Flow (cfm)	50	
Leg A Rotameter (scfm)	27	
Leg B Rotameter (scfm)	25	
Inlet PID	354.1	
Exhaust Post GAC PID	396.1	
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**

<b>SAMPLE ID:</b>	<b>SAMPLE TIME:</b>
<b>Analytes:</b> TVPH (8015), VOCs (8260), Fixed Gas (CO/CO2/O2)	
<b>OPERATING WELLS</b>	

**ZONES**

Change in Well Operation: \_\_\_\_\_

**LEG A DEEP**

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-2RD		1067	
SVE-3		383.6	
SVE-5		1320	
SVE-11D		2254	
SVE-13D		2431	

**LEG A SHALLOW**

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		95.2	
SVE-2RS		684.3	
SVE-4		686.8	
SVE-11S		1221	
SVE-13S		2156	
SVE-14S		752.6	

**LEG B-1**

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		162.6	
SVE-12S		640.3	
SVE-15			

**LEG B-2**

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		31.4	
SVE-9			

COMMENTS/OTHER MAINTENANCE: \_\_\_\_\_

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

DATE: 4-25  
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)	10619	1054
Pre K/O Vacuum (IWC)	-34	
Post K/O Vacuum (IWC)	-28	
Pitot Tube 3" Flow (cfm)	55	
Leg A Rotameter (scfm)	27	
Leg B Rotameter (scfm)	24	
Inlet PID	417.4	
Exhaust Post GAC PID	574	
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		1894	
SVE-3		555.4	
SVE-5		1401	
SVE-11D		2253	
SVE-13D		2254	

#### LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		418.1	
SVE-2RS		1849	
SVE-4		406.4	
SVE-11S		1387	
SVE-13S		2003	
SVE-14S		2396	

#### LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		173.6	
SVE-12S		1296	
SVE-15			

#### LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		101.2	
SVE-9			

COMMENTS/OTHER MAINTENANCE: \_\_\_\_\_

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

DATE: 5-9  
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)	1095.0	1233
Pre K/O Vacuum (IWC)	-31	
Post K/O Vacuum (IWC)	-23	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	29	
Leg B Rotameter (scfm)	23	
Inlet PID	313.2	
Exhaust Post GAC PID	443.1	
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		1610	
SVE-3		545.8	
SVE-5		1342	
SVE-11D		2134	
SVE-13D		2195	

#### LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		363.4	
SVE-2RS		1297	
SVE-4		326.6	
SVE-11S		1529	
SVE-13S		1969	
SVE-14S		735.6	

#### LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		166.7	
SVE-12S		592.6	
SVE-15			

#### LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		31.4	
SVE-9			

COMMENTS/OTHER MAINTENANCE: \_\_\_\_\_

Location SJ 28-G #31 Date 5-23-23

Project / Client HEC

EC, TRUCK, PID, VAC

1300 EC on site for bi-weekly  
OGM

System on & running

Leg A & B Active

Pre KO vac 32 IWC

Post KO vac 26 IWC

Flow 68 CFM

Wells SVE 8, SVE 12S, SVE 10, SVE 5, SVE 1  
SVE 14, SVE 4, SVE 13S, SVE 13D  
SVE 2RS, SVE 2RD, SVE 3, SVE 11S,  
SVE 11D open

Leg A Flow 28 SCFM

Leg B Flow 22 SCFM

PID All open wells 598.6

Hours 11286 @ 1325

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

DATE: 6-7  
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
11641	1129
-32	
-25	
60	
28	
22	
332.9	
641.2	

**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		1747	
SVE-3		410.2	
SVE-5		1014	
SVE-11D		2045	
SVE-13D		1889	

#### LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		143.6	
SVE-2RS		1492	
SVE-4		300.1	
SVE-11S		650.2	
SVE-13S		1693	
SVE-14S		1017	

#### LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		158.3	
SVE-12S		1750	
SVE-15			

#### LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		31.3	
SVE-9			

COMMENTS/OTHER MAINTENANCE: \_\_\_\_\_



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

DATE: 6-22  
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
12004	1456
-31	
-24	
55	
28	
23	
353.4	
334.1	

**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		1421	
SVE-3		413.7	
SVE-5		1253	
SVE-11D		2092	
SVE-13D		1988	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		761	
SVE-2RS		1236	
SVE-4		395.4	
SVE-11S		1655	
SVE-13S		1795	
SVE-14S		811.5	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		165.9	
SVE-12S		920.3	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		65.3	
SVE-9			

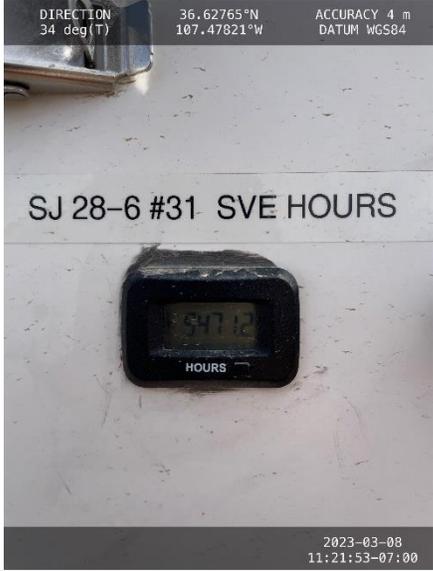
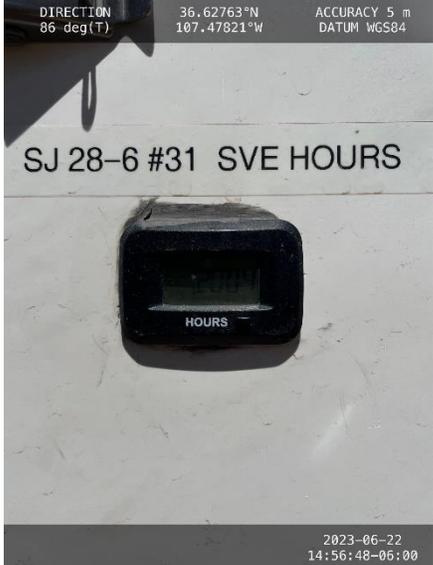
COMMENTS/OTHER MAINTENANCE: \_\_\_\_\_



## APPENDIX B

### Project Photographs

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

<p><b>Photograph 1</b></p> <p>Runtime meter taken on March 8, 2023 at 11:21 AM Hours = 9,471.2</p>	
<p><b>Photograph 2</b></p> <p>Runtime meter taken on June 22, 2023 at 2:56 PM Hours = 12,004</p>	



## 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](http://www.hallenvironmental.com)

July 11, 2023

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

RE: SJ 28 6 31

OrderNo.: 2306C81

Dear Samantha Grabert:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/24/2023 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 29, 2023.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. 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. All samples are reported as received unless otherwise indicated.

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 white background.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**

Lab Order **2306C81**

Date Reported: **7/11/2023**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** HILCORP ENERGY

**Client Sample ID:** SVE-1

**Project:** SJ 28 6 31

**Collection Date:** 6/22/2023 3:15:00 PM

**Lab ID:** 2306C81-001

**Matrix:** AIR

**Received Date:** 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	3000	25		µg/L	5	6/26/2023 1:25:05 PM
Surr: BFB	266	15-412		%Rec	5	6/26/2023 1:25:05 PM
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	8.4	0.50		µg/L	5	7/5/2023 2:38:44 PM
Toluene	39	0.50		µg/L	5	7/5/2023 2:38:44 PM
Ethylbenzene	1.2	0.50		µg/L	5	7/5/2023 2:38:44 PM
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,3,5-Trimethylbenzene	0.75	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Naphthalene	ND	1.0		µg/L	5	7/5/2023 2:38:44 PM
1-Methylnaphthalene	ND	2.0		µg/L	5	7/5/2023 2:38:44 PM
2-Methylnaphthalene	ND	2.0		µg/L	5	7/5/2023 2:38:44 PM
Acetone	ND	5.0		µg/L	5	7/5/2023 2:38:44 PM
Bromobenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Bromodichloromethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Bromoform	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Bromomethane	ND	1.0		µg/L	5	7/5/2023 2:38:44 PM
2-Butanone	ND	5.0		µg/L	5	7/5/2023 2:38:44 PM
Carbon disulfide	ND	5.0		µg/L	5	7/5/2023 2:38:44 PM
Carbon tetrachloride	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Chlorobenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Chloroethane	ND	1.0		µg/L	5	7/5/2023 2:38:44 PM
Chloroform	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Chloromethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
2-Chlorotoluene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
4-Chlorotoluene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
cis-1,2-DCE	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
cis-1,3-Dichloropropene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,2-Dibromo-3-chloropropane	ND	1.0		µg/L	5	7/5/2023 2:38:44 PM
Dibromochloromethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Dibromomethane	ND	1.0		µg/L	5	7/5/2023 2:38:44 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Dichlorodifluoromethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,1-Dichloroethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,1-Dichloroethene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM

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

<b>Qualifiers:</b>	* 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 Quantitative Limit	RL Reporting Limit
	S % Recovery outside of standard limits. If undiluted results may be estimated.	

## Analytical Report

Lab Order 2306C81

Date Reported: 7/11/2023

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SVE-1

Project: SJ 28 6 31

Collection Date: 6/22/2023 3:15:00 PM

Lab ID: 2306C81-001

Matrix: AIR

Received Date: 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: RAA
1,2-Dichloropropane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,3-Dichloropropane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
2,2-Dichloropropane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,1-Dichloropropene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Hexachlorobutadiene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
2-Hexanone	ND	5.0		µg/L	5	7/5/2023 2:38:44 PM
Isopropylbenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
4-Isopropyltoluene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
4-Methyl-2-pentanone	ND	5.0		µg/L	5	7/5/2023 2:38:44 PM
Methylene chloride	ND	1.5		µg/L	5	7/5/2023 2:38:44 PM
n-Butylbenzene	ND	1.5		µg/L	5	7/5/2023 2:38:44 PM
n-Propylbenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
sec-Butylbenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Styrene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
tert-Butylbenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Tetrachloroethene (PCE)	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
trans-1,2-DCE	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
trans-1,3-Dichloropropene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Trichloroethene (TCE)	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Trichlorofluoromethane	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	5	7/5/2023 2:38:44 PM
Vinyl chloride	ND	0.50		µg/L	5	7/5/2023 2:38:44 PM
Xylenes, Total	17	0.75		µg/L	5	7/5/2023 2:38:44 PM
Surr: Dibromofluoromethane	76.8	70-130		%Rec	5	7/5/2023 2:38:44 PM
Surr: 1,2-Dichloroethane-d4	83.5	70-130		%Rec	5	7/5/2023 2:38:44 PM
Surr: Toluene-d8	104	70-130		%Rec	5	7/5/2023 2:38:44 PM
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	5	7/5/2023 2:38:44 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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 2



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# ANALYTICAL SUMMARY REPORT

June 28, 2023

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

Work Order: B23062205                      Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 6/27/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23062205-001	2306C81-001B, SVE-1	06/22/23 15:15	06/27/23	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:



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### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Hall Environmental  
**Project:** Not Indicated  
**Lab ID:** B23062205-001  
**Client Sample ID:** 2306C81-001B, SVE-1

**Report Date:** 06/28/23  
**Collection Date:** 06/22/23 15:15  
**Date Received:** 06/27/23  
**Matrix:** Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>GAS CHROMATOGRAPHY ANALYSIS REPORT</b>							
Oxygen	21.66	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Nitrogen	78.08	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Carbon Dioxide	0.20	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Methane	<0.01	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Ethane	<0.01	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Propane	<0.01	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Hexanes plus	0.06	Mol %		0.01		GPA 2261-95	06/28/23 07:06 / ikc
Propane	< 0.001	gpm		0.001		GPA 2261-95	06/28/23 07:06 / ikc
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	06/28/23 07:06 / ikc
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	06/28/23 07:06 / ikc
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	06/28/23 07:06 / ikc
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	06/28/23 07:06 / ikc
Hexanes plus	0.025	gpm		0.001		GPA 2261-95	06/28/23 07:06 / ikc
GPM Total	0.025	gpm		0.001		GPA 2261-95	06/28/23 07:06 / ikc
GPM Pentanes plus	0.025	gpm		0.001		GPA 2261-95	06/28/23 07:06 / ikc

#### CALCULATED PROPERTIES

Gross BTU per cu ft @ Std Cond. (HHV)	3			1		GPA 2261-95	06/28/23 07:06 / ikc
Net BTU per cu ft @ std cond. (LHV)	3			1		GPA 2261-95	06/28/23 07:06 / ikc
Pseudo-critical Pressure, psia	545			1		GPA 2261-95	06/28/23 07:06 / ikc
Pseudo-critical Temperature, deg R	240			1		GPA 2261-95	06/28/23 07:06 / ikc
Specific Gravity @ 60/60F	1.00			0.001		D3588-81	06/28/23 07:06 / ikc
Air, %	98.94			0.01		GPA 2261-95	06/28/23 07:06 / ikc

- The analysis was not corrected for air.

#### COMMENTS

- 06/28/23 07:06 / 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:** B23062205

**Report Date:** 06/28/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method:</b> GPA 2261-95											
Batch: R404488											
<b>Lab ID:</b> LCS062723	11	Laboratory Control Sample			Run: GCNGA-B_230627A			06/27/23 11:57			
Oxygen		0.60	Mol %	0.01	120	70	130				
Nitrogen		5.92	Mol %	0.01	99	70	130				
Carbon Dioxide		0.99	Mol %	0.01	100	70	130				
Methane		74.4	Mol %	0.01	100	70	130				
Ethane		6.00	Mol %	0.01	100	70	130				
Propane		5.34	Mol %	0.01	108	70	130				
Isobutane		1.98	Mol %	0.01	99	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		0.78	Mol %	0.01	98	70	130				
<b>Lab ID:</b> B23062211-001ADUP	12	Sample Duplicate			Run: GCNGA-B_230627A			06/27/23 14:25			
Oxygen		17.0	Mol %	0.01				0.2	20		
Nitrogen		79.0	Mol %	0.01				0.0	20		
Carbon Dioxide		3.64	Mol %	0.01				0.3	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		0.39	Mol %	0.01				2.6	20		
<b>Lab ID:</b> LCS062823	11	Laboratory Control Sample			Run: GCNGA-B_230627A			06/28/23 09:16			
Oxygen		0.60	Mol %	0.01	120	70	130				
Nitrogen		5.94	Mol %	0.01	99	70	130				
Carbon Dioxide		0.99	Mol %	0.01	100	70	130				
Methane		74.4	Mol %	0.01	100	70	130				
Ethane		5.95	Mol %	0.01	99	70	130				
Propane		5.52	Mol %	0.01	112	70	130				
Isobutane		1.97	Mol %	0.01	98	70	130				
n-Butane		1.97	Mol %	0.01	98	70	130				
Isopentane		0.96	Mol %	0.01	96	70	130				
n-Pentane		0.97	Mol %	0.01	97	70	130				
Hexanes plus		0.76	Mol %	0.01	95	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

## B23062205

Login completed by: Yvonna E. Smith

Date Received: 6/27/2023

Reviewed by: darcy

Received by: lel

Reviewed Date: 6/28/2023

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: 17.8°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.

### 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

Form containing company information (Energy Laboratories), address (1120 South 27th Street, Billings, MT 59107), and a table with columns for ITEM, SAMPLE, CLIENT SAMPLE ID, BOTTLE TYPE, MATRIX, COLLECTION DATE, and ANALYTICAL COMMENTS.

Handwritten note: 1 \*\*3-DAY TAT\*\* Natural Gas Analysis, O2, CO2 Next Day some sizes

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.

Form for chain of custody tracking, including fields for Requisitioned By, Received By, Date, Time, and checkboxes for report transmission methods (Hardcopy, Fax, Email, Online).



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: 2306C81 RcptNo: 1

Received By: Tracy Casarrubias 6/24/2023 7:45:00 AM

Completed By: Tracy Casarrubias 6/24/2023 9:36:08 AM

Reviewed By: Jun 6/26/23

Chain of Custody

- 1. Is Chain of Custody complete? Yes [ ] No [x] Not Present [ ]
2. How was the sample delivered? Courier

Log In

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

# of preserved bottles checked for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by: TMC 6/24/23

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [ ] No [ ] NA [x]

Person Notified: [ ] Date: [ ]
By Whom: [ ] Via: [ ] eMail [ ] Phone [ ] Fax [ ] In Person [ ]
Regarding: [ ]
Client Instructions: Mailing address and phone number are missing on COC- TMC 6/24/23

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, N/A, Good, Yes, [ ], [ ], [ ]



**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 240042

**CONDITIONS**

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 240042
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

**CONDITIONS**

Created By	Condition	Condition Date
nvelez	Accepted for the record. See app ID 275065 for most updated status.	10/27/2023