NV

ENSOLUM

October 11, 2022

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

Re: Third Quarter 2022 – 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 *Third Quarter 2022 – 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 July, August, and September of 2022 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.

THIRD QUARTER 2022 ACTIVITIES

During the third quarter of 2022, 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 June 13 and September 19, 2022, the SVE system operated for 2,295 hours for a runtime efficiency of 97.6 percent (%). Table 1 presents the SVE system operational hours and percent runtime. Appendix B presents photographs of the runtime meter for calculating the third quarter runtime efficiency. During the third quarter 2022, 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 third quarter 2022 was originally collected on September 19, 2022; however, due to a laboratory issue with the original sample, a subsequent sample was recollected on September 30, 2022 to be used for the third quarter 2022 sample for the system. Flow measurements and runtime hours collected on September 19, 2022 from the SVE system were used for emissions calculations. The third quarter 2022 emissions sample was collected from the 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 (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 10,077 pounds (5.0 tons) of TVPH have been removed by the system to date.

In general, TVPH and benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations have steadily declined since the system began operation in September 2021. As stated above, SVE wells SVE-6, SVE-7D, SVE-7S, SVE-9, and SVE-15 were turned off during third-quarter 2022 operation of the system in order to induce higher vacuum and flow responses in other wells at the Site to target zones with higher remaining impacts. This operating configuration will be maintained for the fourth quarter of 2022.

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 petroluem 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

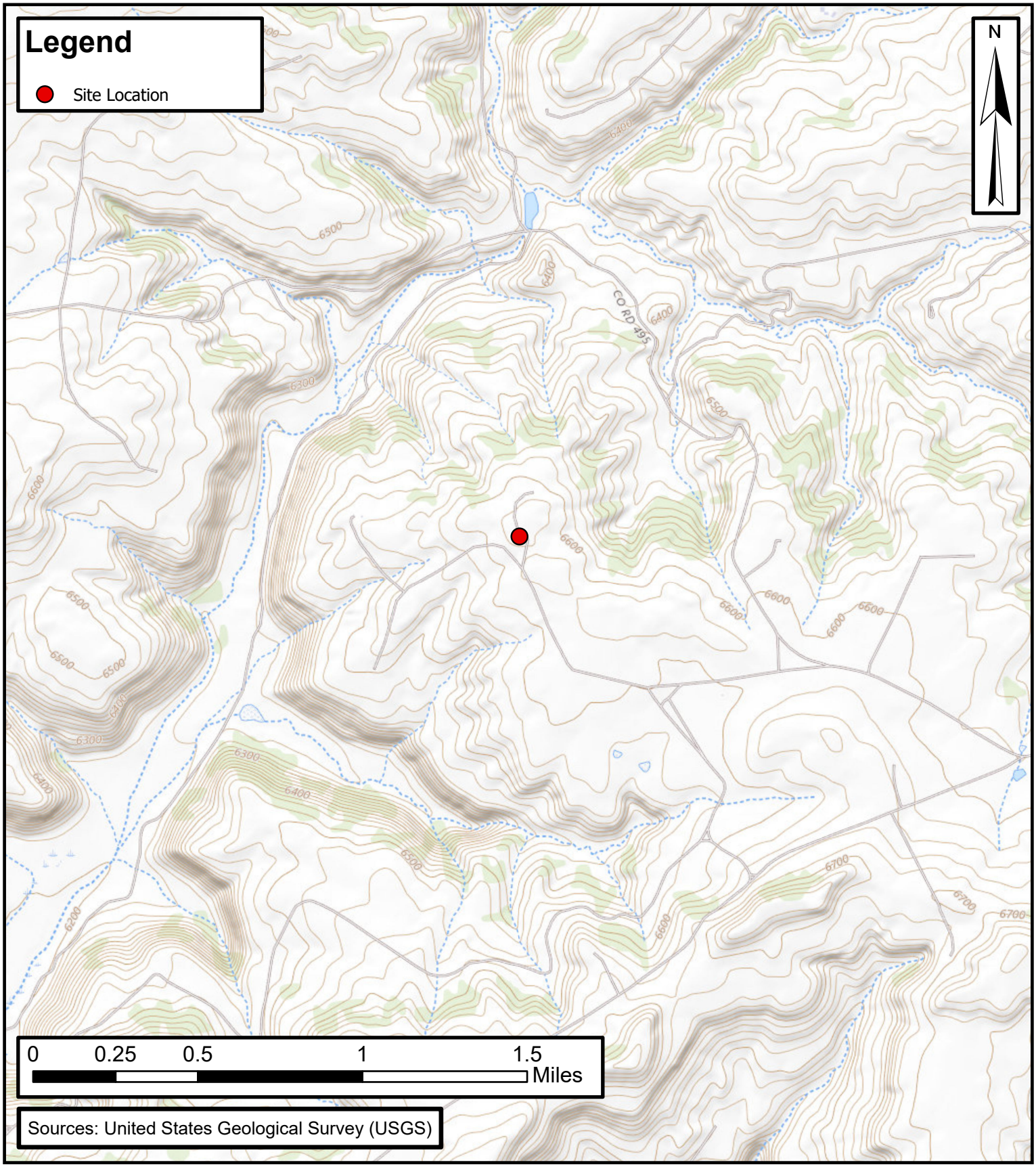
Daniel R. Moir, MS, PG
Senior Managing Geologist
(303) 887-2946
dmoir@ensolum.com

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

ENSOLUM

FIGURES

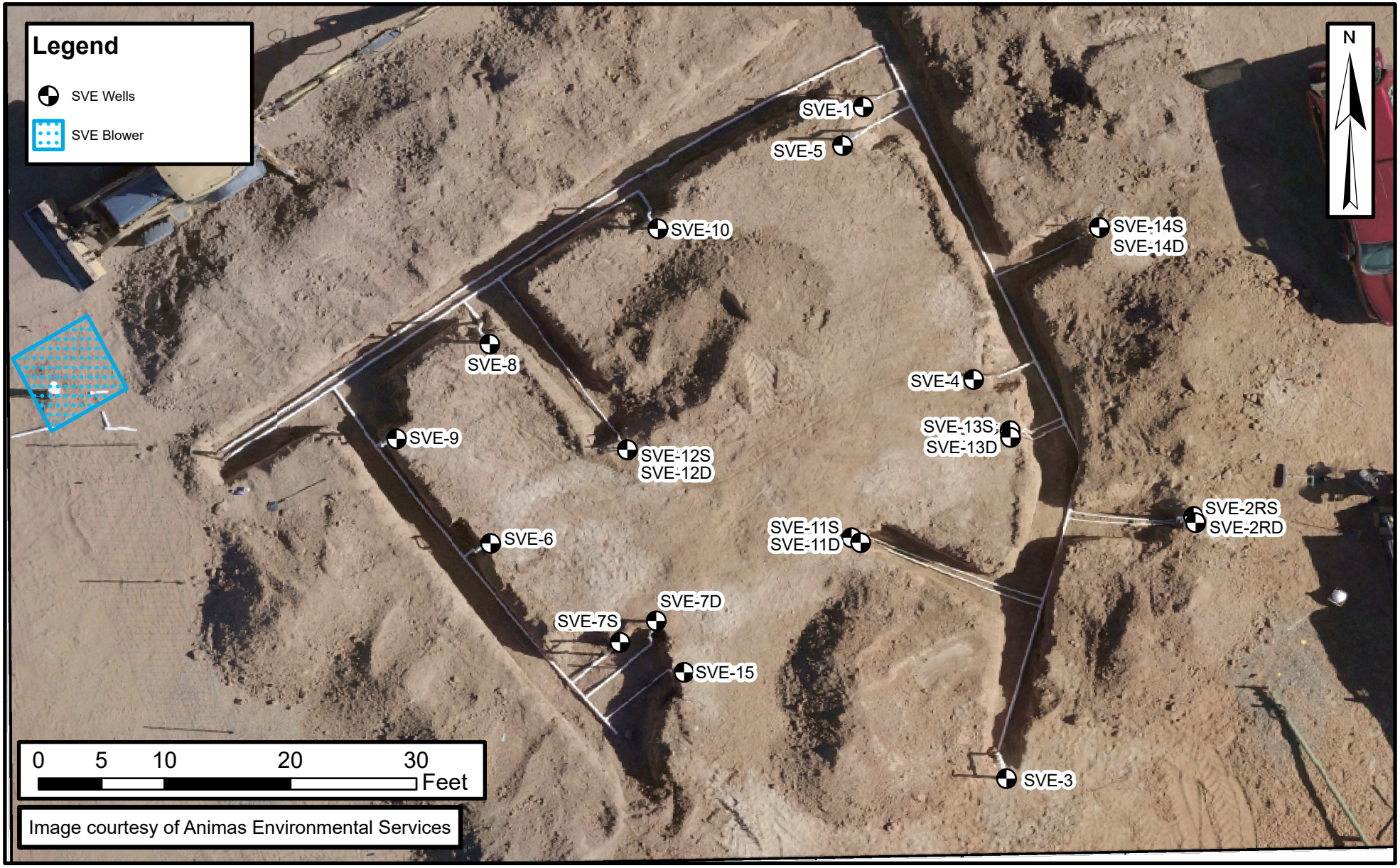


ENSOLUM
Environmental & Hydrogeologic Consultants

Site Location Map

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

FIGURE
1



ENSOLUM
Environmental & Hydrogeologic Consultants

SVE System Configuration

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

FIGURE
2

ENSOLUM

TABLES

ENSOLUM

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

Ensolum Project No. 07A1988031

Date	SVE Runtime Hours (1)	Delta Hours	Days	% Runtime
6/13/2022	3,108	--	--	--
9/19/2022	5,403	2,295	98	97.6%

Notes:

(1): Runtime hours collected from SVE system digital meter installed on February 1, 2022

ENSOLUM

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

Ensolum Project No. 07A1988031

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%

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)

ENSOLUM

TABLE 3
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS
Hilcorp Energy Company - San Juan 28-6 #31
Rio Arriba County, New Mexico

Ensolum Project No. 07A1988031

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
Average	552	129	360	8.7	114	19,500

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
			Average	0.015	0.044	0.0014	0.018	2.9

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
		Total Mass Recovery to Date	63	172	4.3	58	10,077	5.0

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

ENSOLUM

APPENDIX A

Field Notes

Location SJ 26-6 # 31 Date 7/7/22

Project / Client Hilcorp

RH, 2020 Tacoma, PID, Vacuum pump

1125 - RIT on site for O+M
Blower Hours 3677.1 @ 1130
Leg A Flow = 24 SCFM
Leg B Flow = 23 SCFM
Pre-KO Vac = -34 in H_2O
Post-KO Vac = -28 in H_2O
Total Flow = 135 CFM
KO Tank sight tube = empty
1135 - Calibrate PID 100 ppm Isobutylene
Influent PID: 635
Exhaust PID: 1000

	PID
SVE-8	97
12S	2061
10	1315
5	2139
1	376
14S	2284
4	26 2758
13S	2245
13D	2432
2RD	3099

	PID
2RS	1526
3	773
11D	2305
11S	1726

1215 RIT off site

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

DATE: 7-21
TIME ONSITE:

O&M PERSONNEL:
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)**	4006.4	1250
Pre K/O Vacuum (IWC)	-36	
Post K/O Vacuum (IWC)	-30	
Pitot Tube 3" Flow (cfm)	90	
Leg A Rotameter (scfm)	27	
Leg B Rotameter (scfm)	25	
Inlet PID	420.9	
Exhaust Post GAC PID	702.9	
Liquid in K/O Sight Tube (Y/N)	N	
K/O Liquird Drained (gallons)	0	

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		1590	
SVE-3		461.4	
SVE-5		998.5	
SVE-11D		1476	
SVE-13D		1518	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		140.5	
SVE-2RS		636.6	
SVE-4		1209	
SVE-11S		1176	
SVE-13S		1187	
SVE-14S		1233	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D		~	
SVE-10		527.2	
SVE-12S		678.7	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6		~	
SVE-7S		=	
SVE-8		48.27	
SVE-9		=	

COMMENTS/OTHER MAINTENANCE:

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

DATE: 8-2-22
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	

HOUSEKEEPING Check

Generator Lubrication	
Inline Filter Clean	
Clean Wye Strainer	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	4252.6	1447
Pre K/O Vacuum (IWC)	-38	
Post K/O Vacuum (IWC)	-32	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	26	
Leg B Rotameter (scfm)	24	
Inlet PID	417	
Exhaust Post GAC PID	619	
Liquid in K/O Sight Tube (Y/N)	N	
K/O Liquird Drained (gallons)		

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		1562	
SVE-3		555	
SVE-5		1174	
SVE-11D		1546	
SVE-13D		1553	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		100	
SVE-2RS		830	
SVE-4		1141	
SVE-11S		948	
SVE-13S		1086	
SVE-14S		1168	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		665	
SVE-12S		625	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		66.7	
SVE-9			

COMMENTS/OTHER MAINTENANCE:

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

DATE: 8-16
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)**	4587.1	1314
Pre K/O Vacuum (IWC)	-37	
Post K/O Vacuum (IWC)	-31	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	26	
Leg B Rotameter (scfm)	25	
Inlet PID	420	
Exhaust Post GAC PID	905	
Liquid in K/O Sight Tube (Y/N)	N	
K/O Liquird 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		1777	
SVE-3		489	
SVE-5		1523	
SVE-11D		1870	
SVE-13D		1847	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		139	
SVE-2RS		1140	
SVE-4		1433	
SVE-11S		980	
SVE-13S		1377	
SVE-14S		1271	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		568	
SVE-12S		1219	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		62.9	
SVE-9			

COMMENTS/OTHER MAINTENANCE:

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

DATE: 9-9-22
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	READING	TIME
Blower Hours **(take photo)**	5159.9	1004
Pre K/O Vacuum (IWC)	-36	
Post K/O Vacuum (IWC)	-31	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	27	
Leg B Rotameter (scfm)	25	
Inlet PID	434	
Exhaust Post GAC PID	823	
Liquid in K/O Sight Tube (Y/N)	N	
K/O Liquird 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		1831	
SVE-3		579	
SVE-5		1282	
SVE-11D		1816	
SVE-13D		1890	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		82.3	
SVE-2RS		1336	
SVE-4		1170	
SVE-11S		1158	
SVE-13S		1602	
SVE-14S		1687	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		517	
SVE-12S		1552	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		21.9	
SVE-9			

COMMENTS/OTHER MAINTENANCE:

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

DATE: 9-19
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)**	54033	1454
Pre K/O Vacuum (IWC)	-37	
Post K/O Vacuum (IWC)	-31	
Pitot Tube 3" Flow (cfm)	60	
Leg A Rotameter (scfm)	27	
Leg B Rotameter (scfm)	25	
Inlet PID	410	
Exhaust Post GAC PID	838	
Liquid in K/O Sight Tube (Y/N)	N	
K/O Liquird 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		1899	
SVE-3		648	
SVE-5		1527	
SVE-11D		1989	
SVE-13D		1996	

LEG A SHALLOW

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-1		99.6	
SVE-2RS		578	
SVE-4		1123	
SVE-11S		694	
SVE-13S		1591	
SVE-14S		1181	

LEG B-1

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-7D			
SVE-10		517	
SVE-12S		1467	
SVE-15			

LEG B-2

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
SVE-6			
SVE-7S			
SVE-8		21.8	
SVE-9			

COMMENTS/OTHER MAINTENANCE:

ENSOLUM

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 June 13, 2022 at 11:53 AM Hours = 3108.0	
Photograph 2 Runtime meter taken on September 19, 2022 at 2:54 PM Hours = 5403.3	

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

ENSOLUM

APPENDIX C

Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 07, 2022

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

RE: SJ 28 6 H31 OrderNo.: 2210048

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/4/2022 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2210048**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 9-30
Project: SJ 28 6 H31
Collection Date: 9/30/2022 11:50:00 AM
Lab ID: 2210048-001 **Matrix:** AIR
Received Date: 10/4/2022 7:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
Benzene	19	5.0		µg/L	50	10/5/2022 4:50:00 PM
Toluene	65	5.0		µg/L	50	10/5/2022 4:50:00 PM
Ethylbenzene	2.1	2.0		µg/L	50	10/5/2022 4:50:00 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Naphthalene	ND	10		µg/L	50	10/5/2022 4:50:00 PM
1-Methylnaphthalene	ND	20		µg/L	50	10/5/2022 4:50:00 PM
2-Methylnaphthalene	ND	20		µg/L	50	10/5/2022 4:50:00 PM
Acetone	ND	50		µg/L	50	10/5/2022 4:50:00 PM
Bromobenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Bromodichloromethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Bromoform	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Bromomethane	ND	10		µg/L	50	10/5/2022 4:50:00 PM
2-Butanone	ND	50		µg/L	50	10/5/2022 4:50:00 PM
Carbon disulfide	ND	50		µg/L	50	10/5/2022 4:50:00 PM
Carbon tetrachloride	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Chlorobenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Chloroethane	ND	10		µg/L	50	10/5/2022 4:50:00 PM
Chloroform	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Chloromethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
2-Chlorotoluene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
4-Chlorotoluene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
cis-1,2-DCE	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	10/5/2022 4:50:00 PM
Dibromochloromethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Dibromomethane	ND	10		µg/L	50	10/5/2022 4:50:00 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,1-Dichloroethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,1-Dichloroethene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,2-Dichloropropane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,3-Dichloropropane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
2,2-Dichloropropane	ND	5.0		µg/L	50	10/5/2022 4:50:00 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	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 range due to dilution or matrix interference

Analytical Report
Lab Order **2210048**
Date Reported: **10/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Influent 9-30
Project: SJ 28 6 H31
Collection Date: 9/30/2022 11:50:00 AM
Lab ID: 2210048-001 **Matrix:** AIR
Received Date: 10/4/2022 7:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **CCM**
1,1-Dichloropropene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Hexachlorobutadiene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
2-Hexanone	ND	50		µg/L	50	10/5/2022 4:50:00 PM
Isopropylbenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
4-Isopropyltoluene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
4-Methyl-2-pentanone	ND	50		µg/L	50	10/5/2022 4:50:00 PM
Methylene chloride	ND	15		µg/L	50	10/5/2022 4:50:00 PM
n-Butylbenzene	ND	15		µg/L	50	10/5/2022 4:50:00 PM
n-Propylbenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
sec-Butylbenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Styrene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
tert-Butylbenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
trans-1,2-DCE	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Trichloroethene (TCE)	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Trichlorofluoromethane	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
1,2,3-Trichloropropane	ND	10		µg/L	50	10/5/2022 4:50:00 PM
Vinyl chloride	ND	5.0		µg/L	50	10/5/2022 4:50:00 PM
Xylenes, Total	26	7.5		µg/L	50	10/5/2022 4:50:00 PM
Surr: Dibromofluoromethane	85.2	70-130		%Rec	50	10/5/2022 4:50:00 PM
Surr: 1,2-Dichloroethane-d4	82.7	70-130		%Rec	50	10/5/2022 4:50:00 PM
Surr: Toluene-d8	105	70-130		%Rec	50	10/5/2022 4:50:00 PM
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	50	10/5/2022 4:50:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	3700	250		µg/L	50	10/5/2022 4:50:00 PM
Surr: BFB	87.4	70-130		%Rec	50	10/5/2022 4:50:00 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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ENERGY LABORATORIES
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

ANALYTICAL SUMMARY REPORT

October 06, 2022

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

Work Order: B22100419 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 10/5/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B22100419-001	2210048-001B, Influent 9-30	09/30/22 11:50	10/05/22	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
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: B22100419-001
Client Sample ID: 2210048-001B, Influent 9-30

Report Date: 10/06/22
Collection Date: 09/30/22 11:50
DateReceived: 10/05/22
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.57	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Nitrogen	78.16	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Carbon Dioxide	0.28	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	10/06/22 11:26 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	10/06/22 11:26 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	10/06/22 11:26 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	10/06/22 11:26 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	10/06/22 11:26 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	10/06/22 11:26 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	10/06/22 11:26 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	10/06/22 11:26 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	10/06/22 11:26 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	ND			1		GPA 2261-95	10/06/22 11:26 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND			1		GPA 2261-95	10/06/22 11:26 / jrj
Pseudo-critical Pressure, psia	546			1		GPA 2261-95	10/06/22 11:26 / jrj
Pseudo-critical Temperature, deg R	239			1		GPA 2261-95	10/06/22 11:26 / jrj
Specific Gravity @ 60/60F	0.999			0.001		D3588-81	10/06/22 11:26 / jrj
Air, %	98.53			0.01		GPA 2261-95	10/06/22 11:26 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	10/06/22 11:26 / 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:** B22100419 **Report Date:** 10/06/22

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R389182
Lab ID: **LCS100622**	11	Laboratory Control Sample				Run: GCNGA-B_221006A				10/06/22 12:02
Oxygen		0.61	Mol %	0.01	122	70	130			
Nitrogen		6.09	Mol %	0.01	101	70	130			
Carbon Dioxide		0.99	Mol %	0.01	100	70	130			
Methane		74.5	Mol %	0.01	100	70	130			
Ethane		6.00	Mol %	0.01	100	70	130			
Propane		4.99	Mol %	0.01	101	70	130			
Isobutane		2.00	Mol %	0.01	100	70	130			
n-Butane		2.00	Mol %	0.01	100	70	130			
Isopentane		1.01	Mol %	0.01	101	70	130			
n-Pentane		1.01	Mol %	0.01	101	70	130			
Hexanes plus		0.84	Mol %	0.01	105	70	130			
Lab ID: **B22100418-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_221006A				10/06/22 13:03
Oxygen		21.6	Mol %	0.01				0.1	20	
Nitrogen		78.1	Mol %	0.01				0	20	
Carbon Dioxide		0.33	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)

ENERGY LABORATORIES
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

Work Order Receipt Checklist

Hall Environmental

B22100419

Login completed by: Leslie S. Cadreau
Date Received: 10/5/2022

Reviewed by:
Received by: lsc

Reviewed Date:
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:	17.6°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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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	# CONTAINERS	ANALYTICAL COMMENTS
1	2210048-001B	Influent 9-30	TEDLAR	Air	9/30/2022 11:50:00 AM	1	Fixed Gases CO2, O2 *RUSH ASAP* B22100419

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: 10/4/2022	Time: 8:25 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 10/5/22	Time: 09:05

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: _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 2210048 RcptNo: 1

Received By: Juan Rojas 10/4/2022 7:07:00 AM

Completed By: Sean Livingston 10/4/2022 8:23:06 AM

Reviewed By: JR 10/4/22

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? _____ KPA 10.04.22

Checked by: KPA 10.04.22

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				

Chain-of-Custody Record

Client: Hilcorp Energy
Kate Kaufman

Mailing Address:

Phone #:

email or Fax#: Kkaufman@hilcorp.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 3 Day 10-6-22

Project Name:
SJ 28-6 #31

Project #:

Project Manager:
Stuart Hyde - Ensolum

Sampler: E. Carroll
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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2210048
9-30	11:50	Air	Influent 9-30	2 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)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	CO_2, O_2 (Fixed Gas)
	X						X			X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
9-30	1400		Chris Ward		9/30/22	1400
10/3/22	1800	Chris Ward		courier	10/4/22	7:07

Remarks: seal Intact JH 10/4/22
CC: ecarroll@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.

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 150854

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 150854
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Accepted for the record. See app ID 175951 for most updated status.	2/6/2023