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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
Sullivan GC D #1E
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: NCS1518952648

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 Sullivan GC D #1E natural gas production well (Site), located in Unit F of Section 26, Township 29 North, Range 11 West in San Juan County, New Mexico (Figure 1). Specifically, this report summarizes Site activities performed in April, May, and June 2023 to the New Mexico Oil Conservation Division (NMOCD).

SVE SYSTEM SPECIFICATIONS

The original SVE system was installed at the Site in April 2016 by XTO Energy, the previous Site owner, in response to a release originating from a broken fiberglass line used to transfer natural gas condensate. The original SVE system was purchased from Geotech Environmental Equipment, Inc. (Geotech) and operated successfully until the summer of 2018. Due to a broken SVE blower motor, the Site's SVE system did not operate between 2018 and March of 2022; however, a rental SVE system was brought onto the Site and began operation on December 2, 2021. The blower motor from the original Geotech system was replaced on March 21, 2022 and the Geotech SVE system was put back into service.

The current Geotech SVE system is configured with vacuum applied to wells PR-1, MW-01, MW-02, MW-05, and MW-06 (shown on Figure 2). The SVE system consists of a 3 horsepower Rotron Model EN656 regenerative blower capable of producing 212 standard cubic feet per minute (scfm) of flow and 73 inches of water column (IWC) vacuum. The layout of the SVE system and piping is shown on Figure 2.

SECOND QUARTER 2023 ACTIVITIES

During the second quarter of 2023, Ensolum and Hilcorp personnel performed bi-weekly operation and maintenance (O&M) visits to verify the system was operating as designed and to perform any required maintenance. Field notes taken during O&M visits are presented in Appendix A. During the second quarter of 2023, all SVE wells (PR-1, MW-01, MW-02, MW-05, and MW-06) were operated in order to induce air flow through impacted soil within the source area. Between March 13 and June 23, 2023, the SVE system operated for 2,430 hours, with a runtime efficiency of 99 percent (%). Appendix B presents

photographs of the runtime meter for calculating the second quarter runtime efficiency. Table 1 presents the SVE system operational hours and percent runtime.

A second quarter emissions sample was collected from the SVE system on June 23, 2023 from a sample port located between the SVE piping manifold and the SVE blower using a high vacuum air sampler. Prior to collection, the emission sample was field screened with a photoionization detector (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 sampling event 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 system (Table 3). Based on these estimates, 89,752 pounds (45 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 verify 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, PG
Senior Managing Geologist
(303) 887-2946
dmoir@ensolum.com

Attachments:

Figure 1 Site Location
Figure 2 SVE System Layout

Table 1 Soil Vapor Extraction System Runtime Calculations
Table 2 Soil Vapor Extraction System Emission 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

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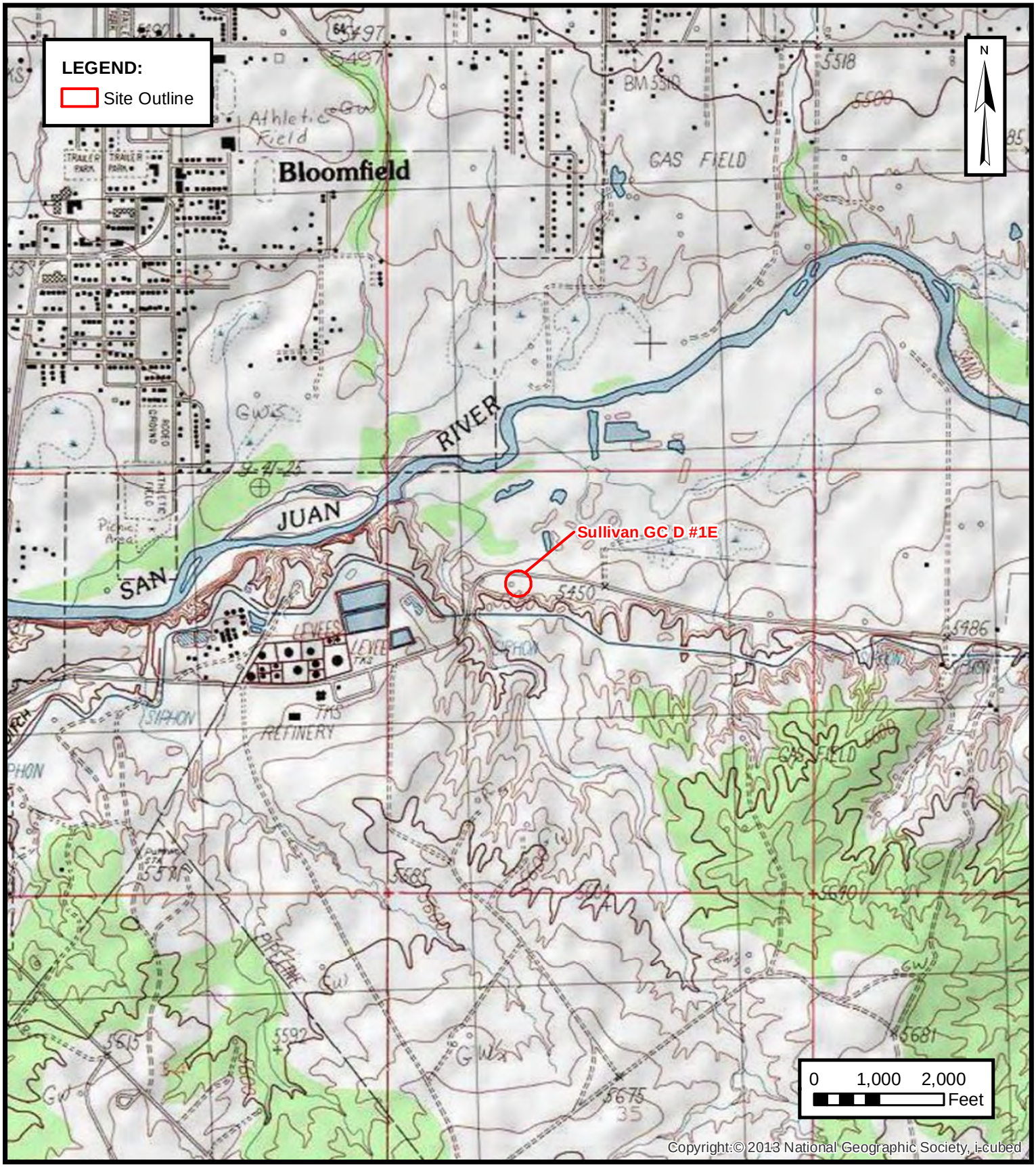
FIGURES



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Environmental & Hydrogeologic Consultants

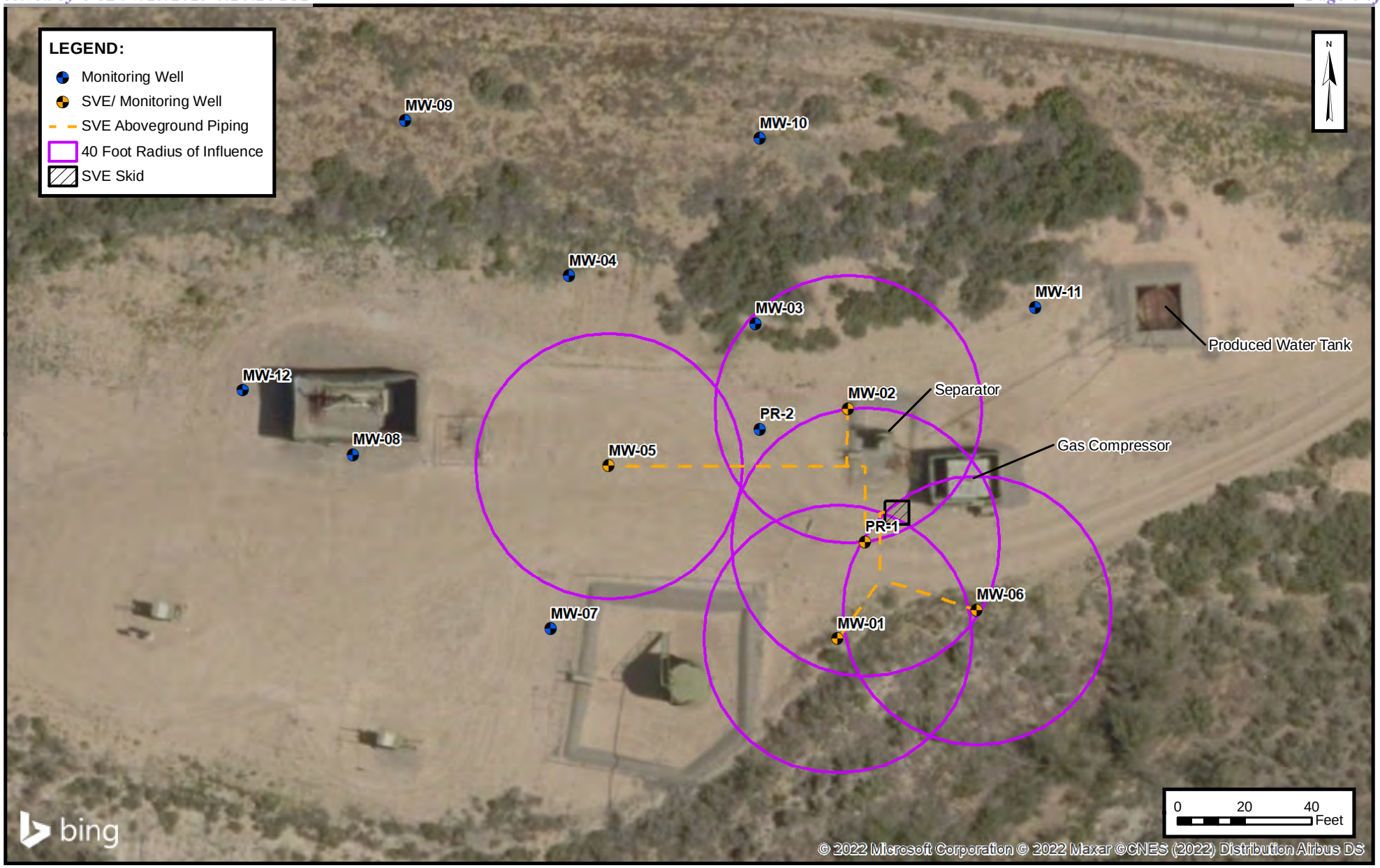
SITE LOCATION

HILLCORP ENERGY COMPANY
SULLIVAN GC D #1E
San Juan County, New Mexico
36.885855° N, 107.899525° W

PROJECT NUMBER: 07A1988029

FIGURE

1



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SVE SYSTEM LAYOUT

HILCORP ENERGY COMPANY
SULLIVAN GC D #1E
San Juan County, New Mexico
36.885855° N, 107.899525° W

PROJECT NUMBER:07A1988029

FIGURE

2

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TABLES

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TABLE 1
SOIL VAPOR EXTRACTION SYSTEM RUNTIME CALCULATIONS
Sullivan GC D#1E
Hilcorp Energy Company
San Juan County, New Mexico

Permanent Geotech SVE Skid Runtime Operation

Date	Total Operational Hours	Delta Hours	Days	% Runtime
3/13/2023	8,560	--	--	--
6/23/2023	10,990	2,430	102	99%

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TABLE 2
SOIL VAPOR EXTRACTION SYSTEM EMISSIONS ANALYTICAL RESULTS
Sullivan GC D#1E
Hilcorp Energy Company
San Juan County, New Mexico

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH/GRO (µg/L)	Oxygen (%)	Carbon Dioxide (%)
4/18/2016	--	840	1,900	87	840	140,000	--	--
4/20/2016	2,375	840	1,900	87	840	140,000	--	--
4/29/2017	3,520	280	1,000	64	630	65,000	--	--
8/11/2016	4,215	92	700	90	910	23,000	--	--
1/24/2018	2,837	46	140	<5.0	410	21,000	--	--
6/29/2018	3,000	63	210	<5.0	410	27,000	--	--
12/2/2021	741	15	<5.0	<5.0	99	33,000	--	--
3/16/2022	982	<0.10	<0.10	<0.10	1.1	64	19.40	1.23
6/17/2022	327	<0.10	<0.10	<0.10	0.25	10	21.54	0.29
9/22/2022	266	<0.10	<0.10	<0.10	<0.15	<5.0	20.57	1.00
12/10/2022	68	0.75	4.9	0.49	9.0	490	21.02	0.65
3/13/2023	69	0.81	4.4	0.30	5.7	300	21.15	0.51
6/23/2023	139	5.9	12	3.0	6.7	840	21.01	0.55

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

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

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TABLE 3
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS
Sullivan GC D#1E
Hilcorp Energy Company
San Juan 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)
4/18/2016	--	840	1,900	87	840	140,000
4/20/2016	2,375	840	1,900	87	840	140,000
4/29/2017	3,520	280	1,000	64	630	65,000
8/11/2016	4,215	92	700	90	910	23,000
1/24/2018	2,837	46	140	*5.0*	410	21,000
6/29/2018	3,000	63	210	*5.0*	410	27,000
12/2/2021	741	15	*5.0*	*5.0*	99	33,000
3/16/2022	982	*0.10*	*0.10*	*0.10*	1.1	64
6/17/2022	327	*0.10*	*0.10*	*0.10*	0.25	10
9/22/2022	266	*0.10*	*0.10*	*0.10*	*0.15*	*5.0*
12/10/2022	68	0.75	4.9	0.49	9.0	490
3/13/2023	69	0.81	4.4	0.30	5.7	300
6/23/2023	139	5.9	12	3.0	6.7	840
Average	1,545	168	452	27	320	34,670

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)
4/18/2016	90	0	0	0.28	0.64	0.029	0.28	47
4/20/2016	109	313,920	313,920	0.34	0.77	0.035	0.34	57
4/29/2017	90	1,480,320	1,166,400	0.19	0.49	0.025	0.25	35
8/11/2016	70	6,923,520	5,443,200	0.049	0.22	0.020	0.20	12
1/24/2018	60	--	--	0.015	0.094	0.011	0.15	4.9
6/29/2018	41	53,246,160	46,322,640	0.0084	0.027	0.001	0.063	3.7
12/2/2021	**Rental SVE System Startup**							
12/2/2021	49	53,246,160	0	0	0	0	0	0
3/16/2022	49	60,581,754	7,335,594	0.0014	0.00047	0.00047	0.0092	3.0
6/17/2022	80	70,724,634	10,142,880	0.000030	0.000030	0.000030	0.0002	0.011
9/22/2022	68	80,221,650	9,497,016	0.000025	0.000025	0.000025	0.000051	0.0019
12/10/2022	80	89,341,170	9,119,520	0.00013	0.00075	0.000088	0.0014	0.074
3/13/2023	75	99,328,020	9,986,850	0.00022	0.00130	0.00011	0.00206	0.11080
6/23/2023	76	110,408,820	11,080,800	0.00095	0.00233	0.00047	0.00176	0.16202
			Average	0.068	0.17	0.009	0.10	12

Flow and Laboratory Analysis

Date	Total SVE System Hours	Delta Hours	Benzene (pounds)	Toluene (pounds)	Ethylbenzene (pounds)	Total Xylenes (pounds)	TVPH (pounds)	TVPH (tons)
4/18/2016	0	0	0.0	0.0	0.0	0.0	0.0	0.0
4/20/2016	48	48	16	37	1.7	16	2,740	1.4
4/29/2017	264	216	41	105	5.5	53	7,452	3.7
8/11/2016	1,560	1,296	63	288	26	261	14,929	7.5
1/24/2018	--	--	--	--	--	--	--	--
6/29/2018	16,848	15,288	128	410	12	961	56,264	28
12/2/2021	**Rental SVE System Startup**							
12/2/2021	968	0	0.0	0.0	0.0	0.0	0.0	0.0
3/16/2022	3,463	2,495	3.5	1.2	1.2	23	7,559	3.8
3/21/2022	**Permanent SVE System Startup**							
3/21/2022	0	0	0.0	0.0	0.0	0.0	0.0	0.0
6/17/2022	2,113	2,113	0.063	0.063	0.063	0.43	23	0.012
9/22/2022	4,441	2,328	0.059	0.059	0.059	0.12	4.4	0.0022
12/10/2022	6,341	1,900	0.24	1.4	0.17	2.6	141	0.070
3/13/2023	8,560	2,219	0.49	2.9	0.25	4.6	246	0.12
6/23/2023	10,990	2,430	2.32	5.7	1.14	4.3	394	0.20
		Total Mass Recovery to Date	255	853	48	1,327	89,752	45

Notes:

cf: cubic feet
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

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APPENDIX A

Field Notes

SULLIVAN GC D#1E SVE SYSTEM (RENTAL UNIT)
BIWEEKLY O&M FORM

DATE: 4-5
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: (check if applicable)

	HIGH/LOW VACUUM
	KO TANK HIGH LEVEL
	HIGH EXHAUST TEMPERATURE

Product Skimmer

Hours **(take photo)**	
Volume in bbl	
Volume removed	
Volume removed to date	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	9115.9	1249
Pre K/O Vacuum (IWC)	32	
Post K/O Vacuum (IWC)	35	
Total Flow (cfm)	75	
Zone 1/ Leg A Flow (scfm)		
Inlet PID	204.9	
Exhaust Post GAC PID	151.9	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquid Drained (gallons)		

HOUSEKEEPING

	Check
Inline Filter Clean	
Clean tank level alarm on skimmer	

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:

Zone 1/ Leg A

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01		22.7	
MW-02		25.3	
MW-05		150.6	
MW-06		82.3	
PR-1		48.8	

Product Recovery

Well

LOCATION	Product thickness	Product removed from Sock (volume and color)	Volume removed total (gal or oz?)	Replace Sock? (Y/N0

COMMENTS/OTHER MAINTENANCE:

SULLIVAN GC D#1E SVE SYSTEM (RENTAL UNIT)
BIWEEKLY O&M FORM

DATE: 4-17
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: (check if applicable)	
	HIGH/LOW VACUUM
	KO TANK HIGH LEVEL
	HIGH EXHAUST TEMPERATURE

Product Skimmer

Hours **(take photo)**
Volume in bbl
Volume removed
Volume removed to date

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	9406.5	1528
Pre K/O Vacuum (IWC)	39	
Post K/O Vacuum (IWC)	31	
Total Flow (cfm)	80	
Zone 1/ Leg A Flow (scfm)		
Inlet PID	263.7	
Exhaust Post GAC PID	114.6	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquid Drained (gallons)		

HOUSEKEEPING Check

Inline Filter Clean	
Clean tank level alarm on skimmer	

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:

Zone 1/ Leg A

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01		131.8	
MW-02		97.5	
MW-05		223.1	
MW-06		218.5	
PR-1		97.4	

Product Recovery

Well LOCATION	Product thickness	Product removed from Sock (volume and color)	Volume removed total (gal or oz?)	Replace Sock? (Y/N0

COMMENTS/OTHER MAINTENANCE:

SULLIVAN GC D#1E SVE SYSTEM (RENTAL UNIT)
BIWEEKLY O&M FORM

DATE: 5-5
TIME ONSITE:

O&M PERSONNEL: D Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: (check if applicable)	
	HIGH/LOW VACUUM
	KO TANK HIGH LEVEL
	HIGH EXHAUST TEMPERATURE

Product Skimmer
Hours **(take photo)**
Volume in bbl
Volume removed
Volume removed to date

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	9834.7	1138
Pre K/O Vacuum (IWC)	31	
Post K/O Vacuum (IWC)	33	
Total Flow (cfm)	83	
Zone 1/ Leg A Flow (scfm)		
Inlet PID	68.4	
Exhaust Post GAC PID	125.1	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquid Drained (gallons)		

HOUSEKEEPING Check

Inline Filter Clean	
Clean tank level alarm on skimmer	

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:

Zone 1/ Leg A

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01		11.1	
MW-02		22.1	
MW-05		138.4	
MW-06		33.9	
PR-1		53.7	

Product Recovery

Well

LOCATION	Product thickness	Product removed from Sock (volume and color)	Volume removed total (gal or oz?)	Replace Sock? (Y/N0

COMMENTS/OTHER MAINTENANCE:

SULLIVAN GC D#1E SVE SYSTEM (RENTAL UNIT)
BIWEEKLY O&M FORM

DATE: 5-18
TIME ONSITE:

O&M PERSONNEL: B Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: (check if applicable)		
		HIGH/LOW VACUUM
		KO TANK HIGH LEVEL
		HIGH EXHAUST TEMPERATURE

Product Skimmer
Hours **(take photo)**
Volume in bbl
Volume removed
Volume removed to date

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	10126	1306
Pre K/O Vacuum (IWC)	39	
Post K/O Vacuum (IWC)	31	
Total Flow (cfm)	82	
Zone 1/ Leg A Flow (scfm)		
Inlet PID	103	
Exhaust Post GAC PID	70.2	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquid Drained (gallons)		

HOUSEKEEPING	Check
Inline Filter Clean	
Clean tank level alarm on skimmer	

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:

Zone 1/ Leg A

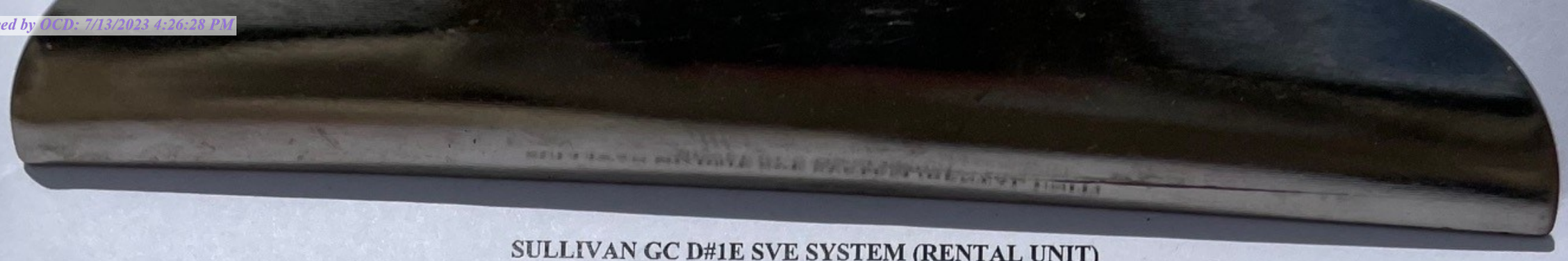
LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01		29.8	
MW-02		24.7	
MW-05		154.8	
MW-06		68.9	
PR-1		61.6	

Product Recovery

Well

LOCATION	Product thickness	Product removed from Sock (volume and color)	Volume removed total (gal or oz?)	Replace Sock? (Y/N0

COMMENTS/OTHER MAINTENANCE:



SULLIVAN GC D#1E SVE SYSTEM (RENTAL UNIT)
BIWEEKLY O&M FORM

DATE: 6-6
TIME ONSITE:

O&M PERSONNEL: D Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: (check if applicable)		
		HIGH/LOW VACUUM
		KO TANK HIGH LEVEL
		HIGH EXHAUST TEMPERATURE

Product Skimmer

Hours **(take photo)**	
Volume in bbl	
Volume removed	
Volume removed to date	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	10581	1234
Pre K/O Vacuum (IWC)	25	
Post K/O Vacuum (IWC)	26	
Total Flow (cfm)	78	
Zone 1/ Leg A Flow (scfm)		
Inlet PID	51.6	
Exhaust Post GAC PID	117.3	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquid Drained (gallons)		

HOUSEKEEPING Check

Inline Filter Clean	
Clean tank level alarm on skimmer	

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:

Zone 1/ Leg A

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01		81.7	
MW-02		22.6	
MW-05		103.6	
MW-06		23.3	
PR-1		45.2	

Product Recovery

Well

LOCATION	Product thickness	Product removed from Sock (volume and color)	Volume removed total (gal or oz?)	Replace Sock? (Y/N0

COMMENTS/OTHER MAINTENANCE:

SULLIVAN GC D#1E SVE SYSTEM (RENTAL UNIT)
BIWEEKLY O&M FORM

DATE: 6-23
TIME ONSITE:

O&M PERSONNEL: D Sinclair
TIME OFFSITE:

SVE SYSTEM - MONTHLY O&M

SVE ALARMS: (check if applicable)		
		HIGH/LOW VACUUM
		KO TANK HIGH LEVEL
		HIGH EXHAUST TEMPERATURE

Product Skimmer

Hours **(take photo)**	
Volume in bbl	
Volume removed	
Volume removed to date	

SVE SYSTEM	READING	TIME
Blower Hours **(take photo)**	10990	1333
Pre K/O Vacuum (IWC)	30	
Post K/O Vacuum (IWC)	32	
Total Flow (cfm)	76	
Zone 1/ Leg A Flow (scfm)		
Inlet PID	139.3	
Exhaust Post GAC PID	100.5	
Liquid in K/O Sight Tube (Y/N)		
K/O Liquid Drained (gallons)		

HOUSEKEEPING Check

Inline Filter Clean	
Clean tank level alarm on skimmer	

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:

one 1/ Leg A

LOCATION	VACUUM (IWC)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01		83.8	
MW-02		65.1	
MW-05		116	
MW-06		134.4	
PR-1		62.5	

Product Recovery

Well

LOCATION	Product thickness	Product removed from Sock (volume and color)	Volume removed total (gal or oz?)	Replace Sock? (Y/N0

COMMENTS/OTHER MAINTENANCE:

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APPENDIX B

Project Photographs

PROJECT PHOTOGRAPHS
Sullivan GC D #1E
San Juan County, New Mexico
Hilcorp Energy Company

Photograph 1 Runtime meter taken on March 13, 2023 at 2:44 PM Hours = 8,568.0		
Photograph 2 Runtime meter taken on June 23, 2023 at 1:33 PM Hours = 10,990		

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

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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

July 11, 2023

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

RE: Sullivan GC D 1E OrderNo.: 2306C77

Dear Kate Kaufman:

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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2306C77**
Date Reported: **7/11/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: SVE-1
Project: Sullivan GC D 1E
Collection Date: 6/23/2023 1:45:00 PM
Lab ID: 2306C77-001 **Matrix:** AIR
Received Date: 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	840	25		µg/L	5	6/26/2023 4:41:13 PM
Surr: BFB	271	15-412		%Rec	5	6/26/2023 4:41:13 PM
EPA METHOD 8260B: VOLATILES						Analyst: **JR**
Benzene	5.9	0.10		µg/L	1	7/6/2023 12:01:12 PM
Toluene	12	1.0		µg/L	10	7/7/2023 11:52:21 AM
Ethylbenzene	3.0	0.10		µg/L	1	7/6/2023 12:01:12 PM
Methyl tert-butyl ether (MTBE)	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,2,4-Trimethylbenzene	1.6	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,3,5-Trimethylbenzene	1.8	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,2-Dichloroethane (EDC)	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,2-Dibromoethane (EDB)	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Naphthalene	ND	0.20		µg/L	1	7/6/2023 12:01:12 PM
1-Methylnaphthalene	ND	0.40		µg/L	1	7/6/2023 12:01:12 PM
2-Methylnaphthalene	ND	0.40		µg/L	1	7/6/2023 12:01:12 PM
Acetone	ND	1.0		µg/L	1	7/6/2023 12:01:12 PM
Bromobenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Bromodichloromethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Bromoform	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Bromomethane	ND	0.20		µg/L	1	7/6/2023 12:01:12 PM
2-Butanone	ND	1.0		µg/L	1	7/6/2023 12:01:12 PM
Carbon disulfide	ND	1.0		µg/L	1	7/6/2023 12:01:12 PM
Carbon tetrachloride	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Chlorobenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Chloroethane	ND	0.20		µg/L	1	7/6/2023 12:01:12 PM
Chloroform	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Chloromethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
2-Chlorotoluene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
4-Chlorotoluene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
cis-1,2-DCE	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
cis-1,3-Dichloropropene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,2-Dibromo-3-chloropropane	ND	0.20		µg/L	1	7/6/2023 12:01:12 PM
Dibromochloromethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Dibromomethane	ND	0.20		µg/L	1	7/6/2023 12:01:12 PM
1,2-Dichlorobenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,3-Dichlorobenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,4-Dichlorobenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Dichlorodifluoromethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,1-Dichloroethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,1-Dichloroethene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2306C77**
Date Reported: **7/11/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: SVE-1
Project: Sullivan GC D 1E
Collection Date: 6/23/2023 1:45:00 PM
Lab ID: 2306C77-001 **Matrix:** AIR **Received Date:** 6/24/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **JR**
1,2-Dichloropropane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,3-Dichloropropane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
2,2-Dichloropropane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,1-Dichloropropene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Hexachlorobutadiene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
2-Hexanone	ND	1.0		µg/L	1	7/6/2023 12:01:12 PM
Isopropylbenzene	0.40	0.10		µg/L	1	7/6/2023 12:01:12 PM
4-Isopropyltoluene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
4-Methyl-2-pentanone	ND	1.0		µg/L	1	7/6/2023 12:01:12 PM
Methylene chloride	ND	0.30		µg/L	1	7/6/2023 12:01:12 PM
n-Butylbenzene	ND	0.30		µg/L	1	7/6/2023 12:01:12 PM
n-Propylbenzene	0.50	0.10		µg/L	1	7/6/2023 12:01:12 PM
sec-Butylbenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Styrene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
tert-Butylbenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,1,1,2-Tetrachloroethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,1,2,2-Tetrachloroethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Tetrachloroethene (PCE)	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
trans-1,2-DCE	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
trans-1,3-Dichloropropene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,2,3-Trichlorobenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,2,4-Trichlorobenzene	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,1,1-Trichloroethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,1,2-Trichloroethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Trichloroethene (TCE)	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Trichlorofluoromethane	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
1,2,3-Trichloropropane	ND	0.20		µg/L	1	7/6/2023 12:01:12 PM
Vinyl chloride	ND	0.10		µg/L	1	7/6/2023 12:01:12 PM
Xylenes, Total	6.7	1.5		µg/L	10	7/7/2023 11:52:21 AM
Surr: Dibromofluoromethane	96.2	70-130		%Rec	1	7/6/2023 12:01:12 PM
Surr: 1,2-Dichloroethane-d4	123	70-130		%Rec	1	7/6/2023 12:01:12 PM
Surr: Toluene-d8	118	70-130		%Rec	1	7/6/2023 12:01:12 PM
Surr: 4-Bromofluorobenzene	191	70-130	S	%Rec	1	7/6/2023 12:01:12 PM

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2306C77**
11-Jul-23

Client: HILCORP ENERGY
Project: Sullivan GC D 1E

Sample ID: **2306c77-001adup** SampType: **DUP** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SVE-1** Batch ID: **GA97710** RunNo: **97710**
Prep Date: Analysis Date: **6/26/2023** SeqNo: **3553831** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	820	25						1.92	20	
Surr: BFB	27000		10000		267	15	412	0	0	

Qualifiers:

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

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ANALYTICAL SUMMARY REPORT

June 28, 2023

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

Work Order: B23062209 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
B23062209-001	2306C77-001B, SVE-1	06/23/23 13:45	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: B23062209-001
Client Sample ID: 2306C77-001B, SVE-1

Report Date: 06/28/23
Collection Date: 06/23/23 13:45
DateReceived: 06/27/23
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Nitrogen	78.06	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Carbon Dioxide	0.55	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Methane	0.38	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Ethane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Propane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	06/27/23 16:07 / ikc
Propane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 16:07 / ikc
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 16:07 / ikc
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 16:07 / ikc
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 16:07 / ikc
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 16:07 / ikc
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 16:07 / ikc
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 16:07 / ikc
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	06/27/23 16:07 / ikc
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	4			1		GPA 2261-95	06/27/23 16:07 / ikc
Net BTU per cu ft @ std cond. (LHV)	3			1		GPA 2261-95	06/27/23 16:07 / ikc
Pseudo-critical Pressure, psia	547			1		GPA 2261-95	06/27/23 16:07 / ikc
Pseudo-critical Temperature, deg R	240			1		GPA 2261-95	06/27/23 16:07 / ikc
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	06/27/23 16:07 / ikc
Air, %	95.98			0.01		GPA 2261-95	06/27/23 16:07 / ikc
- The analysis was not corrected for air.							
COMMENTS							
-						-	06/27/23 16:07 / 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)

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B23062209 **Report Date:** 06/28/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: GPA 2261-95										Batch: R404488
Lab ID: 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			
Lab ID: 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	
Lab ID: 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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Work Order Receipt Checklist

Hall Environmental

B23062209

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

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

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2306C77-001B	SVE-1	TEDLAR	Air	6/23/2023 1:45:00 PM	1	**~~3 DAY~~ Next Day TAT** Natural Gas Analysis, O2, CO2 cmc 6/26/23 B23062209

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: 6/24/2023	Time: 9:06 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: Nyoki Lehrman	6/27/23	09:25

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: 2306C77 RcptNo: 1

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

Completed By: Tracy Casarrubias 6/24/2023 9:05:30 AM

Reviewed By: JN 6/26/23

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: TMC 6/24/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: Mailing address and phone number are missing on COC- TMC 6/24/23

16. Additional remarks:

17. **Cooler Information**

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

Chain-of-Custody Record

Client: Hilcorp

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 6-27

Project Name: Sullivan GC D 1E

Project #:

Project Manager: Kate Kaufman

Sampler: Brandon Sinclair

On Ice: ☐ Yes ☑ No

# of Coolers: 1

Cooler Temp (Including CF): N/A (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2306C77
6-23	1345	air	SVE-1	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)	8015 TVPH	Fixed gases O_2 & CO_2				
										✓	✓				

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
6-23				Courier	6/24/23	7:45
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

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

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 240043

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 240043
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Accepted for the record. See app ID 275067 for most updated status.	10/27/2023