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1. Continue O&M schedule as stated in report.
2. Submit next quarterly report by October 15, 2024.

July 11, 2024

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

Re: Second Quarter 2024 – 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 2024 – 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 of 2024 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 2024 ACTIVITIES

During the second quarter of 2024, 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 first quarter of 2024, 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 22, 2024, and June 26, 2024, the SVE system operated for 2,045 hours, with a runtime efficiency of 89 percent (%). System downtime was the result of the blower motor seizing and tripping the breaker, as reported to the NMOCD via email

correspondence on April 15, 2024 (Appendix B). A new motor was procured, and system operation resumed following replacement. Appendix C presents photographs of the runtime meter for calculating the runtime efficiency. Table 1 presents the SVE system operational hours and percent runtime.

A second quarter 2024 vapor sample was collected on June 14, 2024, 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 vapor sample was collected directly into two 1-Liter Tedlar® bags and submitted to Eurofins Environment Testing (Formerly Hall Environmental Analysis Laboratory), 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 D.

Vapor 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, 91,208 pounds (46 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.

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

Sincerely,
Ensolum, LLC

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Attachments:

Figure 1	Site Location
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	Correspondance

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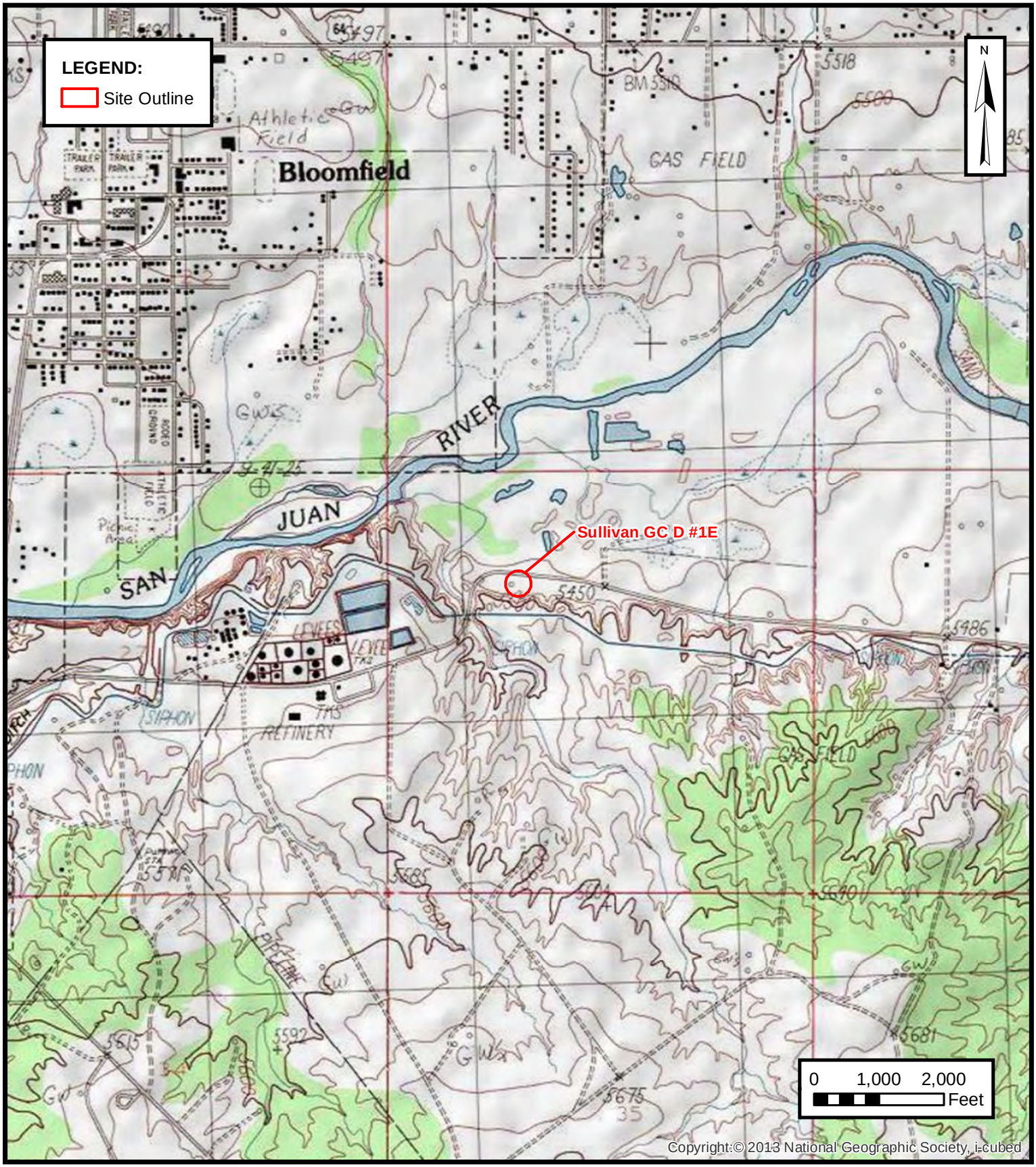
Figures



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Environmental, Engineering and Hydrogeologic Consultants

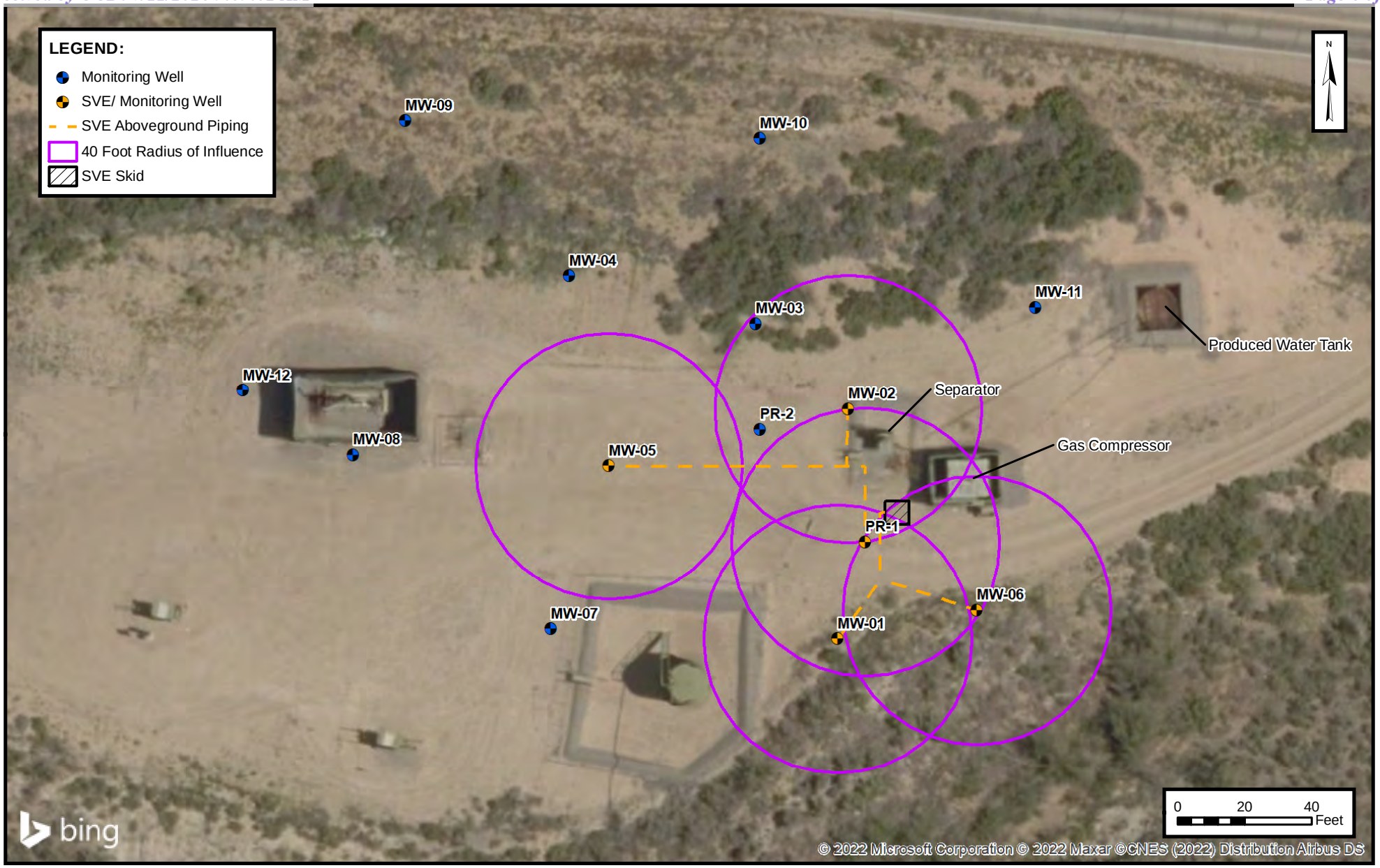
SITE LOCATION

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
3/22/2024	17,525	--	--	--
6/26/2024	19,570	2,045	96	89%

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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
8/18/2023	76	2.4	2.9	<1.0	1.8	340	20.83	0.68
11/21/2023	186	2.8	18	1.7	18	480	20.94	0.51
3/4/2024	212	4.0	29.0	2.7	31	580	21.41	0.51
6/14/2024	142	4.4	4.1	<1.0	2.1	340	20.44	0.72

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

<: 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

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	**Rental SVE System Startup**					
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
3/21/2022	**Permanent SVE System Startup**					
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
8/18/2023	76	2.4	2.9	*1.0*	1.8	340
11/21/2023	186	2.8	18	1.7	18	480
3/4/2024	212	4.0	29.0	2.7	31	580
6/14/2024	142	4.4	4.1	*1.0*	2.1	340
Average	1,197	129	349	21	248	26,615

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
3/21/2022	**Permanent SVE System Startup**							
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	0.0013	0.00011	0.0021	0.11
6/23/2023	76	110,408,820	11,080,800	0.00095	0.0023	0.00047	0.0018	0.16
8/18/2023	80	116,845,620	6,436,800	0.00124	0.0022	0.00060	0.0013	0.18
11/21/2023	75	127,065,120	10,219,500	0.00073	0.0029	0.00038	0.0028	0.12
3/4/2024	110	143,512,320	16,447,200	0.00140	0.0097	0.00091	0.0101	0.22
6/14/2024	110	157,953,120	14,440,800	0.00173	0.0068	0.00076	0.0068	0.19
			Average	0.053	0.134	0.007	0.078	9.584

Mass Recovery

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	2.3	5.7	1.1	4.3	394	0.20
8/18/2023	12,331	1,341	1.7	3.0	0.80	1.7	237	0.12
11/21/2023	14,602	2,271	1.7	6.7	0.86	6.3	261	0.13
3/4/2024	17,094	2,492	3.5	24.1	2.26	25.1	543	0.27
6/14/2024	19,282	2,188	3.8	14.9	1.67	14.9	414	0.21
		Total Mass Recovery to Date	265	901	53	1,375	91,208	46

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: 4-2
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)**	17789	1396
Pre K/O Vacuum (IWC)	26	
Post K/O Vacuum (IWC)	28	
Total Flow (cfm)	107	
Zone 1/ Leg A Flow (cfm)		
Inlet PID (ppm)	155.3	
Exhaust Post GAC PID (ppm)	48.3	
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)	VELOCITY (fpm)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01	9.96		104.8	
MW-02	10.95		92.1	
MW-05	10.07		104.8	
MW-06	9.47		93.6	
PR-1	10.21		94.9	

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: 4-26
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)**	18104	1240
Pre K/O Vacuum (IWC)	24	
Post K/O Vacuum (IWC)	27	
Total Flow (cfm)	110	
Zone 1/ Leg A Flow (cfm)		
Inlet PID (ppm)	39.4	
Exhaust Post GAC PID (ppm)	38.3	
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)	VELOCITY (fpm)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01	8.48		20.8	
MW-02	9.18		38	
MW-05	8.95		38.7	
MW-06	8.19		32.1	
PR-1	8.77		33.5	

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:

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

DATE: 5-2
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)**	18249	1303
Pre K/O Vacuum (IWC)	35	
Post K/O Vacuum (IWC)	31	
Total Flow (cfm)	110	
Zone 1/ Leg A Flow (cfm)		
Inlet PID (ppm)	143.9	
Exhaust Post GAC PID (ppm)	98.2	
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)	VELOCITY (fpm)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01	8.55		139.5	
MW-02	9.04		99.3	
MW-05	8.65		97.5	
MW-06	7.94		94.9	
PR-1	8.65		98.7	

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: 5-20
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)**	18684	1616
Pre K/O Vacuum (IWC)	22	
Post K/O Vacuum (IWC)	25	
Total Flow (cfm)	170	
Zone 1/ Leg A Flow (cfm)		
Inlet PID (ppm)	161.3	
Exhaust Post GAC PID (ppm)	29.9	
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)	VELOCITY (fpm)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01	8.45 9.48		101.8 88.5	
MW-02	9.13		97.6	
MW-05	8.55		93.2	
MW-06	4.81		89	
PR-1				

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: 6-14
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)**	19282	1407
Pre K/O Vacuum (IWC)	23	
Post K/O Vacuum (IWC)	27	
Total Flow (cfm)	110	
Zone 1/ Leg A Flow (cfm)		
Inlet PID (ppm)	142.2	
Exhaust Post GAC PID (ppm)	45.2	
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: SVE-1 **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)	VELOCITY (fpm)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01	8.51		112.8	
MW-02	9.14		95.2	
MW-05	8.72		95.8	
MW-06	8.23		98.1	
PR-2	4.82		91.1	

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: 6-26
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)**	19570	1427
Pre K/O Vacuum (IWC)	32	
Post K/O Vacuum (IWC)	25	
Total Flow (cfm)	100	
Zone 1/ Leg A Flow (cfm)		
Inlet PID (ppm)	152.2	
Exhaust Post GAC PID (ppm)	35.1	
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)	VELOCITY (fpm)	PID HEADSPACE (PPM)	ADJUSTMENTS
MW-01	8.5		116.1	
MW-02	9.16		89.9	
MW-05	9.12		99.7	
MW-06	8.45		91.3	
PR-2	4.82		94.5	

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:

ENSOLUM

APPENDIX B

Correspondence

From: Mitch Killough
To: "Velez, Nelson, EMNRD"
Cc: Stuart Hyde; "Bratcher, Michael, EMNRD"
Subject: RE: [EXTERNAL] Sullivan GC D 1E SVE Runtime Issue (nCS1518952648)
Attachments: image001.png

Good morning Nelson.

As of 4/23/2024 at 10:55 am (MT), the SVE system at the Sullivan GC D 1E is back online. The blower was received and has been installed on the skid. As you indicated below, we will document these corrective action efforts in the next quarterly report.

If you have any questions or concerns, please let me know.

Thanks.

Mitch Killough
Hilcorp Energy Company
713-757-5247 (Office)
281-851-2338 (Mobile)

From: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Monday, April 15, 2024 8:56 AM
To: Mitch Killough <mkillough@hilcorp.com>
Cc: shyde@ensolum.com; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Subject: Re: [EXTERNAL] Sullivan GC D 1E SVE Runtime Issue (nCS1518952648)

Good morning Mitch,

Thank you for the updates. Please document all downtime accumulated and deduct from the overall runtime for the appropriate reporting.

Please keep a copy of this communication for inclusion within the appropriate report submittal.

Have a safe and productive day!

Regards,

Nelson Velez ● Environmental Specialist - Adv

Environmental Bureau | EMNRD - Oil Conservation Division

1000 Rio Brazos Road | Aztec, NM 87410

(505) 469-6146 | nelson.velez@emnrd.nm.gov

http://www.emnrd.state.nm.us/OCD/

From: Mitch Killough <mkillough@hilcorp.com>
Sent: Monday, April 15, 2024 7:25 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: shyde@ensolum.com <shyde@ensolum.com>
Subject: [EXTERNAL] Sullivan GC D 1E SVE Runtime Issue (nCS1518952648)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Morning Nelson.

This past Friday, the 3 HP Rotron Model EN656 Regenerative Blower on the SVE system at the Sullivan GC D 1E seized up and was taken offline. Hilcorp received a CYGNET alarm during the early AM hours on Friday, 4/12/2024 at 2:55 am (MT) indicating that the unit had gone down. After the route operator was able to visit the site, the system was back online as of 4:55 am (MT). However, another CYGNET alarm was issued later that day at 6:55 pm (MT). When the route operator arrived on location shortly thereafter, the blower motor had seized and was tripping the breaker repeatedly while trying to turn back on. The decision was made to turn off the system later that evening. On the following day, I&E worked to troubleshoot the issue, but no success. The blower motor could not be re-started and operations determined that blower motor replacement would be required. Hilcorp plans to locate and purchase a blower ASAP. Once the blower is received, installed, and successfully returned online, I will follow-up with another update.

All efforts to return the system back to service, including any corrective actions that are implemented, will be documented in the 2Q2024 SVE report.

Let me know if you have any questions or concerns in the meantime.

Thanks.

Mitch Killough
Environmental Specialist
Hilcorp Energy Company
1111 Travis Street
Houston, TX 77002
713-757-5247 (office)
281-851-2338 (cell)
mkillough@hilcorp.com

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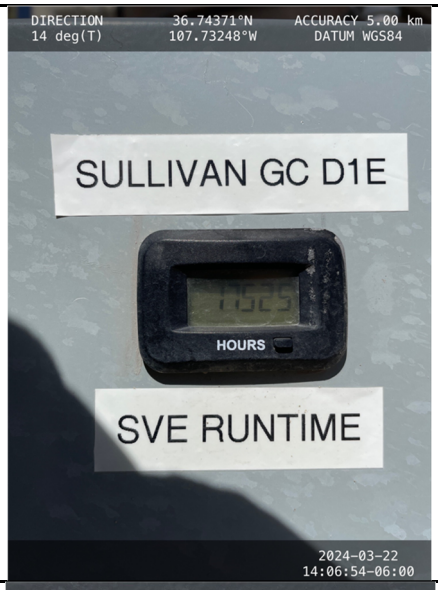
APPENDIX C

Project Photographs

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

Photograph 1 Runtime meter taken on March 22, 2024 at 4:06 PM Hours = 17,525	
Photograph 2 Runtime meter taken on June 26, 2024 at 2:27 PM Hours = 19,570	

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

ENSOLUM

APPENDIX D

Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 7/9/2024 5:29:48 PM

JOB DESCRIPTION

Sullivan GC D 1E

JOB NUMBER

885-6351-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization

Generated
7/9/2024 5:29:48 PM

Authorized for release by
Michelle Garcia, Project Manager
michelle.garcia@et.eurofinsus.com
(505)345-3975

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Laboratory Job ID: 885-6351-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Job ID: 885-6351-1
Project/Site: Sullivan GC D 1E

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Hilcorp Energy
Project: Sullivan GC D 1E

Job ID: 885-6351-1

Job ID: 885-6351-1 Eurofins Albuquerque

Job Narrative
885-6351-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 6/15/2024 1:00 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 26.3°C.

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

Gasoline Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

Client Sample ID: SVE-1

Date Collected: 06/14/24 14:15
Date Received: 06/15/24 13:00
Sample Container: Tedlar Bag 1L

Lab Sample ID: 885-6351-1

Matrix: Air

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	340		50		ug/L			06/27/24 20:00	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*52 - 172*		*06/27/24 20:00*	*10*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/27/24 20:00	10
1,1,1-Trichloroethane	ND		1.0		ug/L			06/27/24 20:00	10
1,1,2,2-Tetrachloroethane	ND		2.0		ug/L			06/27/24 20:00	10
1,1,2-Trichloroethane	ND		1.0		ug/L			06/27/24 20:00	10
1,1-Dichloroethane	ND		1.0		ug/L			06/27/24 20:00	10
1,1-Dichloroethene	ND		1.0		ug/L			06/27/24 20:00	10
1,1-Dichloropropene	ND		1.0		ug/L			06/27/24 20:00	10
1,2,3-Trichlorobenzene	ND		1.0		ug/L			06/27/24 20:00	10
1,2,3-Trichloropropane	ND		2.0		ug/L			06/27/24 20:00	10
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/27/24 20:00	10
1,2,4-Trimethylbenzene	ND		1.0		ug/L			06/27/24 20:00	10
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			06/27/24 20:00	10
1,2-Dibromoethane (EDB)	ND		1.0		ug/L			06/27/24 20:00	10
1,2-Dichlorobenzene	ND		1.0		ug/L			06/27/24 20:00	10
1,2-Dichloroethane (EDC)	ND		1.0		ug/L			06/27/24 20:00	10
1,2-Dichloropropane	ND		1.0		ug/L			06/27/24 20:00	10
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/27/24 20:00	10
1,3-Dichlorobenzene	ND		1.0		ug/L			06/27/24 20:00	10
1,3-Dichloropropane	ND		1.0		ug/L			06/27/24 20:00	10
1,4-Dichlorobenzene	ND		1.0		ug/L			06/27/24 20:00	10
1-Methylnaphthalene	ND		4.0		ug/L			06/27/24 20:00	10
2,2-Dichloropropane	ND		2.0		ug/L			06/27/24 20:00	10
2-Butanone	ND		10		ug/L			06/27/24 20:00	10
2-Chlorotoluene	ND		1.0		ug/L			06/27/24 20:00	10
2-Hexanone	ND		10		ug/L			06/27/24 20:00	10
2-Methylnaphthalene	ND		4.0		ug/L			06/27/24 20:00	10
4-Chlorotoluene	ND		1.0		ug/L			06/27/24 20:00	10
4-Isopropyltoluene	ND		1.0		ug/L			06/27/24 20:00	10
4-Methyl-2-pentanone	ND		10		ug/L			06/27/24 20:00	10
Acetone	ND		10		ug/L			06/27/24 20:00	10
Benzene	4.4		1.0		ug/L			06/27/24 20:00	10
Bromobenzene	ND		1.0		ug/L			06/27/24 20:00	10
Bromodichloromethane	ND		1.0		ug/L			06/27/24 20:00	10
Dibromochloromethane	ND		1.0		ug/L			06/27/24 20:00	10
Bromoform	ND		1.0		ug/L			06/27/24 20:00	10
Bromomethane	ND		3.0		ug/L			06/27/24 20:00	10
Carbon disulfide	ND		10		ug/L			06/27/24 20:00	10
Carbon tetrachloride	ND		1.0		ug/L			06/27/24 20:00	10
Chlorobenzene	ND		1.0		ug/L			06/27/24 20:00	10
Chloroethane	ND		2.0		ug/L			06/27/24 20:00	10
Chloroform	ND		1.0		ug/L			06/27/24 20:00	10

Client Sample Results

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

Client Sample ID: SVE-1

Date Collected: 06/14/24 14:15
Date Received: 06/15/24 13:00
Sample Container: Tedlar Bag 1L

Lab Sample ID: 885-6351-1

Matrix: Air

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		3.0		ug/L			06/27/24 20:00	10
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/27/24 20:00	10
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/27/24 20:00	10
Dibromomethane	ND		1.0		ug/L			06/27/24 20:00	10
Dichlorodifluoromethane	ND		1.0		ug/L			06/27/24 20:00	10
Ethylbenzene	ND		1.0		ug/L			06/27/24 20:00	10
Hexachlorobutadiene	ND		1.0		ug/L			06/27/24 20:00	10
Isopropylbenzene	ND		1.0		ug/L			06/27/24 20:00	10
Methyl-tert-butyl Ether (MTBE)	ND		1.0		ug/L			06/27/24 20:00	10
Methylene Chloride	ND		3.0		ug/L			06/27/24 20:00	10
n-Butylbenzene	ND		3.0		ug/L			06/27/24 20:00	10
N-Propylbenzene	ND		1.0		ug/L			06/27/24 20:00	10
Naphthalene	ND		2.0		ug/L			06/27/24 20:00	10
sec-Butylbenzene	ND		1.0		ug/L			06/27/24 20:00	10
Styrene	ND		1.0		ug/L			06/27/24 20:00	10
tert-Butylbenzene	ND		1.0		ug/L			06/27/24 20:00	10
Tetrachloroethene (PCE)	ND		1.0		ug/L			06/27/24 20:00	10
Toluene	**4.1**		1.0		ug/L			06/27/24 20:00	10
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/27/24 20:00	10
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/27/24 20:00	10
Trichloroethene (TCE)	ND		1.0		ug/L			06/27/24 20:00	10
Trichlorofluoromethane	ND		1.0		ug/L			06/27/24 20:00	10
Vinyl chloride	ND		1.0		ug/L			06/27/24 20:00	10
Xylenes, Total	**2.1**		1.5		ug/L			06/27/24 20:00	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 130*		*06/27/24 20:00*	*10*
Toluene-d8 (Surr)	*102*		*70 - 130*		*06/27/24 20:00*	*10*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*06/27/24 20:00*	*10*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*06/27/24 20:00*	*10*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

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

Lab Sample ID: MB 885-7599/3
Matrix: Air
Analysis Batch: 7599

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		ug/L			06/27/24 17:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*52 - 172*		*06/27/24 17:09*	*1*

Lab Sample ID: LCS 885-7599/2
Matrix: Air
Analysis Batch: 7599

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			500	475		ug/L		95	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*52 - 172*

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

Lab Sample ID: MB 885-7511/28
Matrix: Air
Analysis Batch: 7511

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.10		ug/L			06/27/24 17:09	1
1,1,1-Trichloroethane	ND		0.10		ug/L			06/27/24 17:09	1
1,1,2,2-Tetrachloroethane	ND		0.20		ug/L			06/27/24 17:09	1
1,1,2-Trichloroethane	ND		0.10		ug/L			06/27/24 17:09	1
1,1-Dichloroethane	ND		0.10		ug/L			06/27/24 17:09	1
1,1-Dichloroethene	ND		0.10		ug/L			06/27/24 17:09	1
1,1-Dichloropropene	ND		0.10		ug/L			06/27/24 17:09	1
1,2,3-Trichlorobenzene	ND		0.10		ug/L			06/27/24 17:09	1
1,2,3-Trichloropropane	ND		0.20		ug/L			06/27/24 17:09	1
1,2,4-Trichlorobenzene	ND		0.10		ug/L			06/27/24 17:09	1
1,2,4-Trimethylbenzene	ND		0.10		ug/L			06/27/24 17:09	1
1,2-Dibromo-3-Chloropropane	ND		0.20		ug/L			06/27/24 17:09	1
1,2-Dibromoethane (EDB)	ND		0.10		ug/L			06/27/24 17:09	1
1,2-Dichlorobenzene	ND		0.10		ug/L			06/27/24 17:09	1
1,2-Dichloroethane (EDC)	ND		0.10		ug/L			06/27/24 17:09	1
1,2-Dichloropropane	ND		0.10		ug/L			06/27/24 17:09	1
1,3,5-Trimethylbenzene	ND		0.10		ug/L			06/27/24 17:09	1
1,3-Dichlorobenzene	ND		0.10		ug/L			06/27/24 17:09	1
1,3-Dichloropropane	ND		0.10		ug/L			06/27/24 17:09	1
1,4-Dichlorobenzene	ND		0.10		ug/L			06/27/24 17:09	1
1-Methylnaphthalene	ND		0.40		ug/L			06/27/24 17:09	1
2,2-Dichloropropane	ND		0.20		ug/L			06/27/24 17:09	1
2-Butanone	ND		1.0		ug/L			06/27/24 17:09	1
2-Chlorotoluene	ND		0.10		ug/L			06/27/24 17:09	1
2-Hexanone	ND		1.0		ug/L			06/27/24 17:09	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

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

Lab Sample ID: MB 885-7511/28
Matrix: Air
Analysis Batch: 7511

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.40		ug/L			06/27/24 17:09	1
4-Chlorotoluene	ND		0.10		ug/L			06/27/24 17:09	1
4-Isopropyltoluene	ND		0.10		ug/L			06/27/24 17:09	1
4-Methyl-2-pentanone	ND		1.0		ug/L			06/27/24 17:09	1
Acetone	ND		1.0		ug/L			06/27/24 17:09	1
Benzene	ND		0.10		ug/L			06/27/24 17:09	1
Bromobenzene	ND		0.10		ug/L			06/27/24 17:09	1
Bromodichloromethane	ND		0.10		ug/L			06/27/24 17:09	1
Dibromochloromethane	ND		0.10		ug/L			06/27/24 17:09	1
Bromoform	ND		0.10		ug/L			06/27/24 17:09	1
Bromomethane	ND		0.30		ug/L			06/27/24 17:09	1
Carbon disulfide	ND		1.0		ug/L			06/27/24 17:09	1
Carbon tetrachloride	ND		0.10		ug/L			06/27/24 17:09	1
Chlorobenzene	ND		0.10		ug/L			06/27/24 17:09	1
Chloroethane	ND		0.20		ug/L			06/27/24 17:09	1
Chloroform	ND		0.10		ug/L			06/27/24 17:09	1
Chloromethane	ND		0.30		ug/L			06/27/24 17:09	1
cis-1,2-Dichloroethene	ND		0.10		ug/L			06/27/24 17:09	1
cis-1,3-Dichloropropene	ND		0.10		ug/L			06/27/24 17:09	1
Dibromomethane	ND		0.10		ug/L			06/27/24 17:09	1
Dichlorodifluoromethane	ND		0.10		ug/L			06/27/24 17:09	1
Ethylbenzene	ND		0.10		ug/L			06/27/24 17:09	1
Hexachlorobutadiene	ND		0.10		ug/L			06/27/24 17:09	1
Isopropylbenzene	ND		0.10		ug/L			06/27/24 17:09	1
Methyl-tert-butyl Ether (MTBE)	ND		0.10		ug/L			06/27/24 17:09	1
Methylene Chloride	ND		0.30		ug/L			06/27/24 17:09	1
n-Butylbenzene	ND		0.30		ug/L			06/27/24 17:09	1
N-Propylbenzene	ND		0.10		ug/L			06/27/24 17:09	1
Naphthalene	ND		0.20		ug/L			06/27/24 17:09	1
sec-Butylbenzene	ND		0.10		ug/L			06/27/24 17:09	1
Styrene	ND		0.10		ug/L			06/27/24 17:09	1
tert-Butylbenzene	ND		0.10		ug/L			06/27/24 17:09	1
Tetrachloroethene (PCE)	ND		0.10		ug/L			06/27/24 17:09	1
Toluene	ND		0.10		ug/L			06/27/24 17:09	1
trans-1,2-Dichloroethene	ND		0.10		ug/L			06/27/24 17:09	1
trans-1,3-Dichloropropene	ND		0.10		ug/L			06/27/24 17:09	1
Trichloroethene (TCE)	ND		0.10		ug/L			06/27/24 17:09	1
Trichlorofluoromethane	ND		0.10		ug/L			06/27/24 17:09	1
Vinyl chloride	ND		0.10		ug/L			06/27/24 17:09	1
Xylenes, Total	ND		0.15		ug/L			06/27/24 17:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*		*06/27/24 17:09*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*06/27/24 17:09*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*06/27/24 17:09*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*06/27/24 17:09*	*1*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

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

Lab Sample ID: MB 885-7511/5
Matrix: Air
Analysis Batch: 7511

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			06/27/24 17:09	1
1,1,1-Trichloroethane	ND		1.0		ug/L			06/27/24 17:09	1
1,1,2,2-Tetrachloroethane	ND		2.0		ug/L			06/27/24 17:09	1
1,1,2-Trichloroethane	ND		1.0		ug/L			06/27/24 17:09	1
1,1-Dichloroethane	ND		1.0		ug/L			06/27/24 17:09	1
1,1-Dichloroethene	ND		1.0		ug/L			06/27/24 17:09	1
1,1-Dichloropropene	ND		1.0		ug/L			06/27/24 17:09	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			06/27/24 17:09	1
1,2,3-Trichloropropane	ND		2.0		ug/L			06/27/24 17:09	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			06/27/24 17:09	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			06/27/24 17:09	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			06/27/24 17:09	1
1,2-Dibromoethane (EDB)	ND		1.0		ug/L			06/27/24 17:09	1
1,2-Dichlorobenzene	ND		1.0		ug/L			06/27/24 17:09	1
1,2-Dichloroethane (EDC)	ND		1.0		ug/L			06/27/24 17:09	1
1,2-Dichloropropane	ND		1.0		ug/L			06/27/24 17:09	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			06/27/24 17:09	1
1,3-Dichlorobenzene	ND		1.0		ug/L			06/27/24 17:09	1
1,3-Dichloropropane	ND		1.0		ug/L			06/27/24 17:09	1
1,4-Dichlorobenzene	ND		1.0		ug/L			06/27/24 17:09	1
1-Methylnaphthalene	ND		4.0		ug/L			06/27/24 17:09	1
2,2-Dichloropropane	ND		2.0		ug/L			06/27/24 17:09	1
2-Butanone	ND		10		ug/L			06/27/24 17:09	1
2-Chlorotoluene	ND		1.0		ug/L			06/27/24 17:09	1
2-Hexanone	ND		10		ug/L			06/27/24 17:09	1
2-Methylnaphthalene	ND		4.0		ug/L			06/27/24 17:09	1
4-Chlorotoluene	ND		1.0		ug/L			06/27/24 17:09	1
4-Isopropyltoluene	ND		1.0		ug/L			06/27/24 17:09	1
4-Methyl-2-pentanone	ND		10		ug/L			06/27/24 17:09	1
Acetone	ND		10		ug/L			06/27/24 17:09	1
Benzene	ND		1.0		ug/L			06/27/24 17:09	1
Bromobenzene	ND		1.0		ug/L			06/27/24 17:09	1
Bromodichloromethane	ND		1.0		ug/L			06/27/24 17:09	1
Dibromochloromethane	ND		1.0		ug/L			06/27/24 17:09	1
Bromoform	ND		1.0		ug/L			06/27/24 17:09	1
Bromomethane	ND		3.0		ug/L			06/27/24 17:09	1
Carbon disulfide	ND		10		ug/L			06/27/24 17:09	1
Carbon tetrachloride	ND		1.0		ug/L			06/27/24 17:09	1
Chlorobenzene	ND		1.0		ug/L			06/27/24 17:09	1
Chloroethane	ND		2.0		ug/L			06/27/24 17:09	1
Chloroform	ND		1.0		ug/L			06/27/24 17:09	1
Chloromethane	ND		3.0		ug/L			06/27/24 17:09	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			06/27/24 17:09	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			06/27/24 17:09	1
Dibromomethane	ND		1.0		ug/L			06/27/24 17:09	1
Dichlorodifluoromethane	ND		1.0		ug/L			06/27/24 17:09	1
Ethylbenzene	ND		1.0		ug/L			06/27/24 17:09	1
Hexachlorobutadiene	ND		1.0		ug/L			06/27/24 17:09	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

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

Lab Sample ID: MB 885-7511/5
Matrix: Air
Analysis Batch: 7511

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		1.0		ug/L			06/27/24 17:09	1
Methyl-tert-butyl Ether (MTBE)	ND		1.0		ug/L			06/27/24 17:09	1
Methylene Chloride	ND		3.0		ug/L			06/27/24 17:09	1
n-Butylbenzene	ND		3.0		ug/L			06/27/24 17:09	1
N-Propylbenzene	ND		1.0		ug/L			06/27/24 17:09	1
Naphthalene	ND		2.0		ug/L			06/27/24 17:09	1
sec-Butylbenzene	ND		1.0		ug/L			06/27/24 17:09	1
Styrene	ND		1.0		ug/L			06/27/24 17:09	1
tert-Butylbenzene	ND		1.0		ug/L			06/27/24 17:09	1
Tetrachloroethene (PCE)	ND		1.0		ug/L			06/27/24 17:09	1
Toluene	ND		1.0		ug/L			06/27/24 17:09	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			06/27/24 17:09	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			06/27/24 17:09	1
Trichloroethene (TCE)	ND		1.0		ug/L			06/27/24 17:09	1
Trichlorofluoromethane	ND		1.0		ug/L			06/27/24 17:09	1
Vinyl chloride	ND		1.0		ug/L			06/27/24 17:09	1
Xylenes, Total	ND		1.5		ug/L			06/27/24 17:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 130*		*06/27/24 17:09*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*06/27/24 17:09*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*06/27/24 17:09*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*06/27/24 17:09*	*1*

Lab Sample ID: LCS 885-7511/3
Matrix: Air
Analysis Batch: 7511

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1-Dichloroethene			20.1	21.9		ug/L		109			
Benzene			20.1	22.8		ug/L		113			
Chlorobenzene			20.1	22.9		ug/L		114			
Toluene			20.2	21.9		ug/L		108			
Trichloroethene (TCE)			20.2	22.1		ug/L		110			

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*
Toluene-d8 (Surr)	*95*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*103*		*70 - 130*

QC Association Summary

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

GC/MS VOA

Analysis Batch: 7511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6351-1	SVE-1	Total/NA	Air	8260B	
MB 885-7511/28	Method Blank	Total/NA	Air	8260B	
MB 885-7511/5	Method Blank	Total/NA	Air	8260B	
LCS 885-7511/3	Lab Control Sample	Total/NA	Air	8260B	

Analysis Batch: 7599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-6351-1	SVE-1	Total/NA	Air	8015M/D	
MB 885-7599/3	Method Blank	Total/NA	Air	8015M/D	
LCS 885-7599/2	Lab Control Sample	Total/NA	Air	8015M/D	

Lab Chronicle

Client: Hilcorp Energy
Job ID: 885-6351-1
Project/Site: Sullivan GC D 1E

Client Sample ID: SVE-1
Lab Sample ID: 885-6351-1
Date Collected: 06/14/24 14:15
Matrix: Air
Date Received: 06/15/24 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015M/D		10	7599	CM	EET ALB	06/27/24 20:00
Total/NA	Analysis	8260B		10	7511	CM	EET ALB	06/27/24 20:00

Laboratory References:

= , 1120 South 27th Street, Billings, MT 59101, TEL (406)252-6325

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

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

Laboratory: Eurofins Albuquerque

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

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015M/D		Air	Gasoline Range Organics [C6 - C10]
8260B		Air	1,1,1,2-Tetrachloroethane
8260B		Air	1,1,1-Trichloroethane
8260B		Air	1,1,2,2-Tetrachloroethane
8260B		Air	1,1,2-Trichloroethane
8260B		Air	1,1-Dichloroethane
8260B		Air	1,1-Dichloroethene
8260B		Air	1,1-Dichloropropene
8260B		Air	1,2,3-Trichlorobenzene
8260B		Air	1,2,3-Trichloropropane
8260B		Air	1,2,4-Trichlorobenzene
8260B		Air	1,2,4-Trimethylbenzene
8260B		Air	1,2-Dibromo-3-Chloropropane
8260B		Air	1,2-Dibromoethane (EDB)
8260B		Air	1,2-Dichlorobenzene
8260B		Air	1,2-Dichloroethane (EDC)
8260B		Air	1,2-Dichloropropane
8260B		Air	1,3,5-Trimethylbenzene
8260B		Air	1,3-Dichlorobenzene
8260B		Air	1,3-Dichloropropane
8260B		Air	1,4-Dichlorobenzene
8260B		Air	1-Methylnaphthalene
8260B		Air	2,2-Dichloropropane
8260B		Air	2-Butanone
8260B		Air	2-Chlorotoluene
8260B		Air	2-Hexanone
8260B		Air	2-Methylnaphthalene
8260B		Air	4-Chlorotoluene
8260B		Air	4-Isopropyltoluene
8260B		Air	4-Methyl-2-pentanone
8260B		Air	Acetone
8260B		Air	Benzene
8260B		Air	Bromobenzene
8260B		Air	Bromodichloromethane
8260B		Air	Bromoform
8260B		Air	Bromomethane
8260B		Air	Carbon disulfide
8260B		Air	Carbon tetrachloride
8260B		Air	Chlorobenzene
8260B		Air	Chloroethane
8260B		Air	Chloroform
8260B		Air	Chloromethane
8260B		Air	cis-1,2-Dichloroethene
8260B		Air	cis-1,3-Dichloropropene
8260B		Air	Dibromochloromethane

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

Laboratory: Eurofins Albuquerque (Continued)

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

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

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

Oregon	NELAP	NM100001	02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015M/D		Air	Gasoline Range Organics [C6 - C10]
8260B		Air	1,1,1,2-Tetrachloroethane
8260B		Air	1,1,1-Trichloroethane
8260B		Air	1,1,2,2-Tetrachloroethane
8260B		Air	1,1,2-Trichloroethane
8260B		Air	1,1-Dichloroethane
8260B		Air	1,1-Dichloroethene
8260B		Air	1,1-Dichloropropene
8260B		Air	1,2,3-Trichlorobenzene
8260B		Air	1,2,3-Trichloropropane
8260B		Air	1,2,4-Trichlorobenzene
8260B		Air	1,2,4-Trimethylbenzene
8260B		Air	1,2-Dibromo-3-Chloropropane
8260B		Air	1,2-Dibromoethane (EDB)
8260B		Air	1,2-Dichlorobenzene
8260B		Air	1,2-Dichloroethane (EDC)
8260B		Air	1,2-Dichloropropane
8260B		Air	1,3,5-Trimethylbenzene
8260B		Air	1,3-Dichlorobenzene
8260B		Air	1,3-Dichloropropane
8260B		Air	1,4-Dichlorobenzene

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Sullivan GC D 1E

Job ID: 885-6351-1

Laboratory: Eurofins Albuquerque (Continued)

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

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

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

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ANALYTICAL SUMMARY REPORT

June 27, 2024

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

Work Order: B24061610 Quote ID: B15626
Project Name: Sullivan GC D 1E, 88501698

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 6/18/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24061610-001	SVE-1 (885-6351-1)	06/14/24 14:15	06/18/24	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond,/1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 So. 27th Street, 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.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

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

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Sullivan GC D 1E, 88501698
Lab ID: B24061610-001
Client Sample ID: SVE-1 (885-6351-1)

Report Date: 06/27/24
Collection Date: 06/14/24 14:15
DateReceived: 06/18/24
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	20.44	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Nitrogen	77.65	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Carbon Dioxide	0.72	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Methane	0.90	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Ethane	0.13	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Propane	0.05	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Isobutane	0.01	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
n-Butane	0.01	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Isopentane	0.01	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Hexanes plus	0.08	Mol %		0.01		GPA 2261-95	06/19/24 12:28 / jrj
Propane	0.014	gpm		0.001		GPA 2261-95	06/19/24 12:28 / jrj
Isobutane	0.003	gpm		0.001		GPA 2261-95	06/19/24 12:28 / jrj
n-Butane	0.003	gpm		0.001		GPA 2261-95	06/19/24 12:28 / jrj
Isopentane	0.004	gpm		0.001		GPA 2261-95	06/19/24 12:28 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	06/19/24 12:28 / jrj
Hexanes plus	0.034	gpm		0.001		GPA 2261-95	06/19/24 12:28 / jrj
GPM Total	0.058	gpm		0.001		GPA 2261-95	06/19/24 12:28 / jrj
GPM Pentanes plus	0.037	gpm		0.001		GPA 2261-95	06/19/24 12:28 / jrj
CALCULATED PROPERTIES							
Gross BTU per cu ft @ Std Cond. (HHV)	18			1		GPA 2261-95	06/19/24 12:28 / jrj
Net BTU per cu ft @ std cond. (LHV)	16			1		GPA 2261-95	06/19/24 12:28 / jrj
Pseudo-critical Pressure, psia	547			1		GPA 2261-95	06/19/24 12:28 / jrj
Pseudo-critical Temperature, deg R	243			1		GPA 2261-95	06/19/24 12:28 / jrj
Specific Gravity @ 60/60F	0.998			0.001		D3588-81	06/19/24 12:28 / jrj
Air, %	93.38			0.01		GPA 2261-95	06/19/24 12:28 / jrj
- The analysis was not corrected for air.							
COMMENTS							
-						-	06/19/24 12:28 / 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
MCL - Maximum Contaminant Level
QCL - Quality Control Limit
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:** B24061610 **Report Date:** 06/27/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **GPA 2261-95**										Batch: R423086
Lab ID: **B24061609-001ADUP**	12	Sample Duplicate				Run: GCNGA-B_240619A				06/19/24 10:50
Oxygen		21.7	Mol %	0.01				0.1	20	
Nitrogen		78.0	Mol %	0.01				0	20	
Carbon Dioxide		0.25	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		0.02	Mol %	0.01				0.0	20	
Lab ID: **LCS061924**	11	Laboratory Control Sample				Run: GCNGA-B_240619A				06/19/24 03:57
Oxygen		0.64	Mol %	0.01	128	70	130			
Nitrogen		6.00	Mol %	0.01	100	70	130			
Carbon Dioxide		1.00	Mol %	0.01	101	70	130			
Methane		75.1	Mol %	0.01	100	70	130			
Ethane		5.81	Mol %	0.01	97	70	130			
Propane		5.04	Mol %	0.01	102	70	130			
Isobutane		1.57	Mol %	0.01	78	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			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B24061610

Login completed by: Danielle N. Harris
Date Received: 6/18/2024
Reviewed by: ysmith
Received by: CMJ
Reviewed Date: 6/21/2024
Carrier name: FedEx NDA

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:	13.0°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

None

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

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Freeman, Andy	Carrier Tracking No(s):	COC No: 885-981.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: andy.freeman@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Energy Laboratories, Inc.		Accreditations Required (See note): NELAP - Oregon; State - New Mexico		Job #: 885-6351-1
Address: 1120 South 27th Street, ,	Due Date Requested: 6/27/2024			Preservation Codes: -
City: Billings	TAT Requested (days):			
State, Zip: MT, 59101				
Phone: 406-252-6325(Tel)	PO #:			Other:
Email:	WO #:			
Project Name: Sullivan GC D 1E	Project #: 88501698			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Fixed Gases)/ Fixed Gases	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SVE-1 (885-6351-1)	6/14/24	14:15 Mountain		Air			X	1	B240616610

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

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

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6/17/24 15:26				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by: Crystal Jones	6/18/24 0930	ELI

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

Ver: 04/02/2024

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

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

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Sullivan GC D 1E

Project #:

Project Manager: Mitch Killough

Sampler: Brandon Sinclair

On Ice: ☐ Yes ☒ No Yogi

# of Coolers: 1

Cooler Temp(Including CF): 26.3 ± 0 = 26.3 (°C)

HALL ENVIRONMENTAL ANALYSIS LABOR
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 871
Tel. 505-345-3975 Fax 505-345-4107

885-6351 COC

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	8015 TVPH	Fixed gas O_2 & CO_2				
6-14	1415	air	SVE-1	2 Tedlar										✓			✓	✓				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/14/24	1546				6/14/24	1546
Date:	Time:	Relinquished by:	Received by:	Via: courier	Date	Time
6/14/24	1718				6/15/24	13:00

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.

Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-6351-1

Login Number: 6351 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: McQuiston, Steven

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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

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

CONDITIONS

Action 363127

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 363127
	Action Type: [REPORT] Alternative Remediation Report (C-141AR)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue O&M schedule as stated in report. 2. Submit next quarterly report by October 15, 2024.	8/2/2024