1. Continue with O & M schedule.
2. Collect quarterly soil vapor sample for VOCs, organic compounds, O_2, and CO_2.
3. Submit next quarterly report by October 31, 2022.

TIMBERWOLF ENVIRONMENTAL

1115 Welsh Ave, Ste. B
College Station, Texas 77840
979.324.2139
www.teamtimberwolf.com

July 14, 2022

Mr. Cory Smith, Environmental Specialist Supervisor
New Mexico Oil Conservation Division – District 3
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: Status Report – 2nd Quarter 2022
Fifield 5 No. 1 (SE ¼, SW ¼, Sec. 5, T29N, R11W)
Hilcorp Energy Company
San Juan County, New Mexico
OCD Incident No.: NVF1718155324

Dear Mr. Smith:

On behalf of Hilcorp Energy Company (Hilcorp), Timberwolf Environmental, LLC (Timberwolf) presents this report to document activities conducted during the 2nd quarter 2022 (2Q22) at the Fifield 5 No. 1 (Site). The Site is a plugged well site, located in northeast San Juan County, New Mexico (Figures 1 through 3).

Environmental Setting and Site Geology

The area immediately surrounding the Site consists of sparse vegetative cover comprised primarily of scrub brush. Area topography consists of ridges divided by shallow valleys with intermittent streams that flow south into the San Juan River. The Site is situated east of an unnamed mesa; average elevation at the Site is approximately 5,786 feet (ft) above mean sea level. The nearest water way is an unnamed intermittent stream located approximately 1,350 ft west of the Site. The intermittent stream empties into the San Juan River, approximately 3.4 miles south of the Site.

According to the U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), the Site soil consists of the Gypsiorthids-Badland-Stumble complex, 5 to 30 percent slopes. The surface layer consists of sandy loam, underlain by lithic bedrock encountered between 16 to 20 inches below ground surface (bgs). Native salinity of the soil is very slightly saline to slightly saline (2.0 to 4.0 millimhos per centimeter (mmhos/cm)).

Site History

Release Event

The Fifield 5 No. 1 well has been plugged and all surface equipment removed from the Site; however, Hilcorp's Hali Meador #005R is located immediately west of the Site and remains active. Historically, the Site has consisted of a well head, line heater and separator with associated below-grade tank (BGT) for produced water, sales meter, and tank battery comprised of one above-ground storage tank

(AST) and one BGT. On or about 06/01/17, removal and closure of the BGT revealed historical contamination beneath the BGT. All surface equipment was removed, and the well was plugged and abandoned.

Investigation and Site Characterization

Initial assessment efforts were conducted by Rule Engineering, LLC (Rule), a subcontractor of ConocoPhillips Company (ConocoPhillips). Hilcorp acquired the property in 2017 and Rule conducted additional assessments in 2018. All findings by Rule Engineering are documented in Timberwolf's *Site Characterization and Remedial Action Plan*, dated February 28, 2019. The initial assessment identified the following constituents of concern (COCs): benzene, toluene, ethylbenzene, and xylene (BTEX) and Total Petroleum Hydrocarbons (TPH).

On 03/20/19, additional borings were installed at the Site to delineate petroleum hydrocarbon impacts vertically and horizontally in soil. All findings are documented in the Timberwolf's *Site Characterization Report and Remedial Action Plan,* dated June 14, 2019.

Remediation – SVE System

In 2019, Hilcorp installed a soil vapor extraction (SVE) system to treat impacted soil related to historical pit tank releases. The SVE system is comprised of 18 SVE wells, 6 vent wells, and a SVE trailer (housing: control valves, flow and vacuum gauges, manifolds, fluid-air separator, automated controls, and a vacuum pump). The system remained inoperative while awaiting a power source.

In September 2021, Hilcorp installed a power source for the SVE system. The power source is a skid-mounted gas-fired motor with a pully and belt drive apparatus to transfer power to a vacuum pump. The new vacuum pump was plumbed into the existing SVE trailer; the automation system was by-passed so that all legs remain open.

Work conducted at this Site is documented in the following reports:

- *Site Characterization and Remedial Action Plan*, dated 02/28/19
- *Site Characterization and Remedial Action Plan*, dated 07/14/19
- *Status Report – 1st Quarter 2020,* dated 09/20/21
- *Status Report – 2nd Quarter 2020,* dated 09/27/21
- *Status Report – 3rd Quarter 2020,* dated 09/27/21
- *Status Report – 4th Quarter 2020,* dated 09/27/21
- *Status Report – 1sr Quarter 2021,* dated 09/27/21
- *Status Report – 2nd Quarter 2021,* dated 09/27/21
- *Status Report – 3rd Quarter 2021,* dated 11/01/21
- *Status Report – 4th Quarter 2021,* dated 01/29/22
- *Status Report – 1sr Quarter 2022,* dated 04/15/22

SVE System Operations

Runtimes, flow rates, runtime percentage, and liquid recovery for 2Q22 is documented in the table below:

Table 1. System Runtime, Flow Rates, and Recovery – 2Q22

Measured Parameter	2Q22
Runtime (hours)	2,158
Percent Runtime	98.8
Average CFM	15
Recovered Liquids (gallons)	0

% - percentage
CFM – cubic feet per minute
N/A – not applicable

During 2Q22, Hilcorp personnel performed six (6) operation and maintenance (O&M) events. A field log of O&M events and maintenance performed is provided in the attached Table A-1.

The 2Q22 had 2,184 hours in the quarter. During 2Q22, the SVE system not shut-in for routine maintenance. The system ran for 2,158 hours based on hour meter readings collected on 03/30/22, 06/21/22, 07/10/22, and Cygnet data. The system runtime in 2Q22 was 98.8 percent (%). Photographs of relevant meter readings are documented in the attached Photographic Log.

Collection and Analysis of Quarterly Soil-Gas Sample

On 06/20/22, a composite soil-gas sample was collected from all SVE legs using a single Tedlar bag.

The Tedlar bag was connected to the SVE trailer sampling port, which is situated downstream of the 4-leg manifold and upstream of the air-water separator. The sampling port valve was opened to purge air within the tubing between the sampling port and Tedlar bag. After purging, the Tedlar bag valve was opened to collect the air sample.

The gas sample was shipped to Hall Environmental and Analytical Laboratory (HEAL) in Albuquerque, New Mexico. HEAL subcontracted the analysis to Pace National in Mt. Juliet, Tennessee for chemical analysis. All sample transfers were conducted under proper chain-of-custody protocol.

The sample was analyzed for volatile organic compounds (VOCs) using EPA Method Toxic Organics 15 (i.e., TO–15) and Organic Compounds (GC) by ASTM Method D1946. Laboratory report and chain-of-custody documents are attached.

Laboratory results of constituents that exceeded laboratory detection limits are presented in Table 2; analytical results of all constituents are presented in the attached Table A-2.

Table 2. Quarterly Soil-Gas Analysis – 06/20/22

Volatile Organic Carbons	SVE (mg/m^3)
Volatile Organic Carbons, mg/m^3	
Benzene	54.3
Cyclohexane	251
Ethanol	2.68
Ethylbenzene	20.3
4-Ethyltoluene	11.9
Heptane	474
N-Hexane	254
Isopropylbenzene	2.89
Methyl Cyclohexane	932
2-Propanol	55.3
Toluene	297
1,2,3-Trimethylbenzene	0.835
1,2,4-Trimethylbenzene	7.8
1,3,5-Trimethylbenzene	7.9
Total Xylenes	181
TPH (GC/MS) Low Fraction	6,030
Organic Compounds, %	
Oxygen	21.3
Carbon Dioxide	< 0.50

mg/m^3 – milligrams per cubic meter
% - percent

Mass Removal

Timberwolf used the results from the soil gas analysis (as reported in Table 2), flow rates, and runtimes to calculate constituent mass removal. Mass removal of BTEX and associated recovered volumes for 2Q22 are presented in Table 3 below.

Table 3. Mass Removal and Associated Volume – 2Q22

Constituent	Mass Removal (kg)[1]	Total Mass Removed (lbs)[2]	Recovered Volume (bbl)
Benzene	2.99	6.57	NC
Toluene	16.3	35.9	NC
Ethylbenzene	1.12	2.46	NC
Xylene	9.95	21.9	NC
GRO	331.6	729.6	2.71

[1]Calculation = minutes ran * CFM * Concentration (mg/m^3) * 1 M^3/35.3147 ft^3 *1g/1000 mg * 1 kg/1000 g
[2]Calculation = [Mass Removal] * 2.2 lbs/kg
GRO = from TPH (GC/MS) Low Fraction (i.e., gasoline range organics)
kg – kilograms
bbl -barrel
lbs – pounds
NC – not calculated

Assumptions:

- API Gravity = 52
- Concentrations of VOCs in soil-gas vapors have remained static throughout the quarter
- Runtime readings based on hour meter readings on 06/21/22, 07/10/22, and Cygnet remote monitoring data.

Summary

The SVE system runtime during 2Q22 was 98.8 % of the total available hours for 2Q22. Runtime hours are based on hour meter readings taken on 3/30/22, 06/21/22, 07/10/22. Cygnet remote monitoring system confirms operation through the quarter. Mass removal calculations indicated the following recovery during the quarter:

- 2.71 bbl of GRO
- 2.99 lbs of benzene
- 16.3 lbs of toluene
- 1.12 lbs of ethylbenzene
- 9.95 lbs of xylene

Further Actions – 3rd Quarter 2022

During 3Q22, the following activities are planned for the Site:

- Conduct bi-weekly Site O&M to ensure proper system function and drain any water/condensate accumulation in the moisture separator as needed
- Collect a quarterly soil-gas sample and analyze for the following constituents:
  - TO-15
  - GRO
  - Oxygen
  - Carbon dioxide
- Prepare a 3Q22 status report

If you have any questions regarding this report or need further assistance, please call us at 979-324-2139.

Sincerely,
Timberwolf Environmental, LLC

Kevin Cole
Project Manager

Jim Foster
President

Attachments: Figures
Tables
Photographic Log
Laboratory Report

cc: Kate Kaufman, Hilcorp Energy Company

Figures

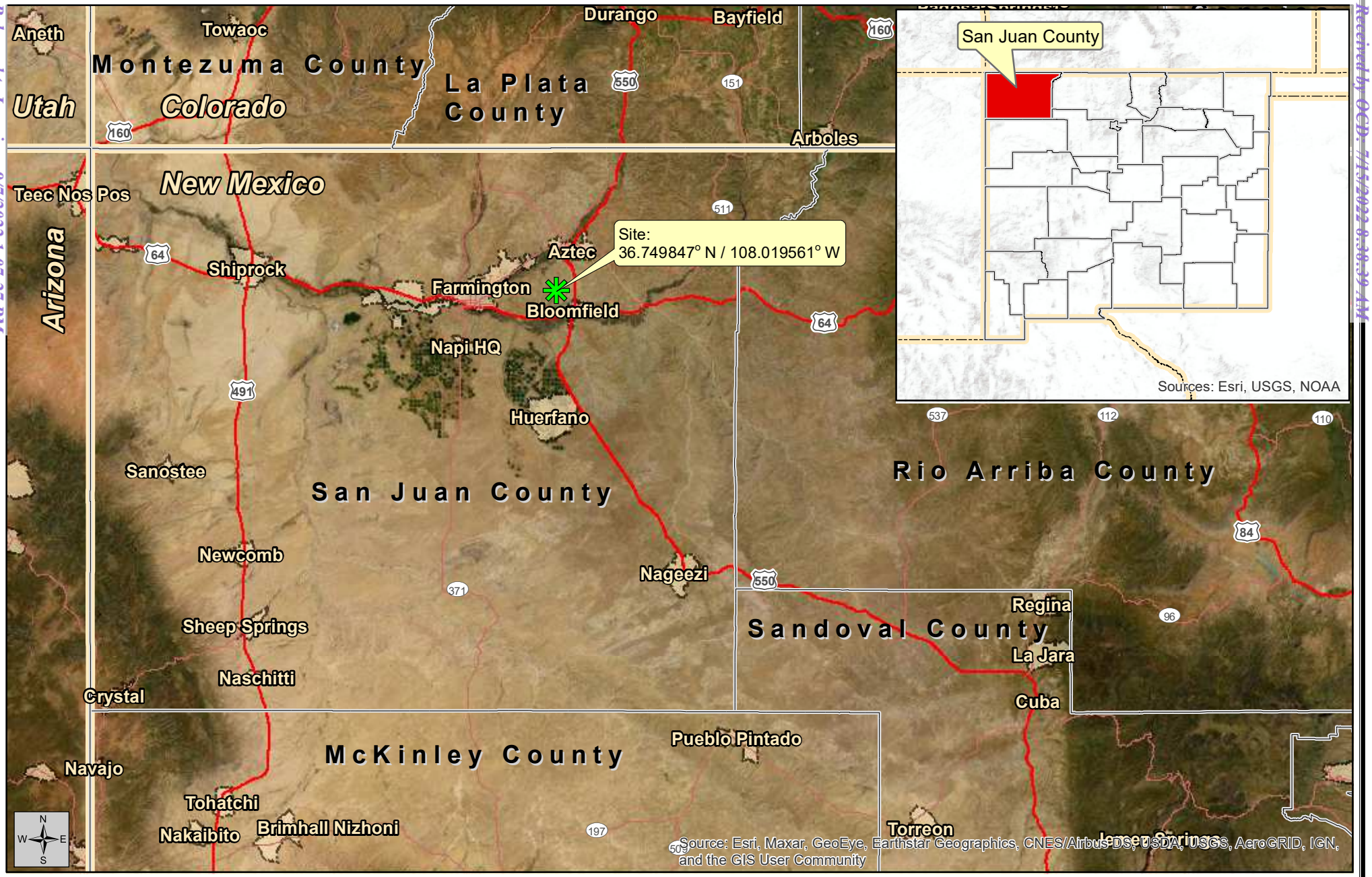


Figure 1 **Site Location Map**	**Status Report - 2nd Quarter 2022**	**July 5, 2022**
TIMBERWOLF ENVIRONMENTAL	1:1,250,000 0 20 40 60 80 100 120 Miles **Fifield 5 No. 1 (OCD Incident No. NVF1718155324)** **Hilcorp Energy Company** **San Juan County, New Mexico**	Site
Created By: Kevin Cole TE Project No.: HEC-190009	Datum: NAD83 Imagery Source: ESRI Vector Source: ESRI and TE	

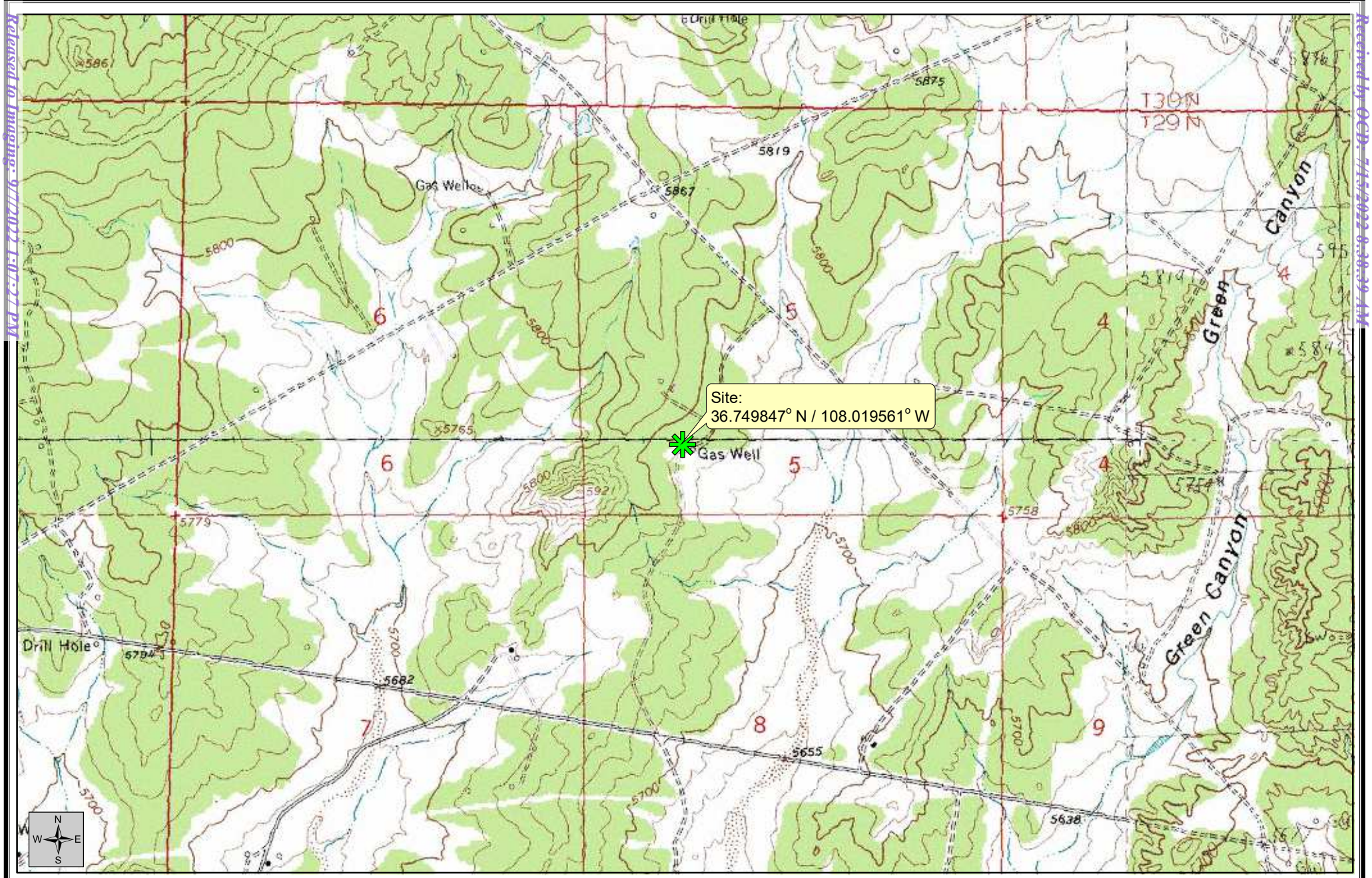


Figure 2 **Topographic Map**	**Status Report - 2nd Quarter 2022**	**July 5, 2022**
TIMBERWOLF ENVIRONMENTAL Created By: Kevin Cole TE Project No.: HEC-190009	1:24,000 0 0.5 1 1.5 2 Miles **Fifield 5 No. 1 (OCD Incident No. NVF1718155324)** **Hilcorp Energy Company** **San Juan County, New Mexico**	Datum: NAD83 Imagery Source: USGS Quads: Aztec, Bloomfield, Flora Vista, Horn Canyon Vector Source: TE
		Site

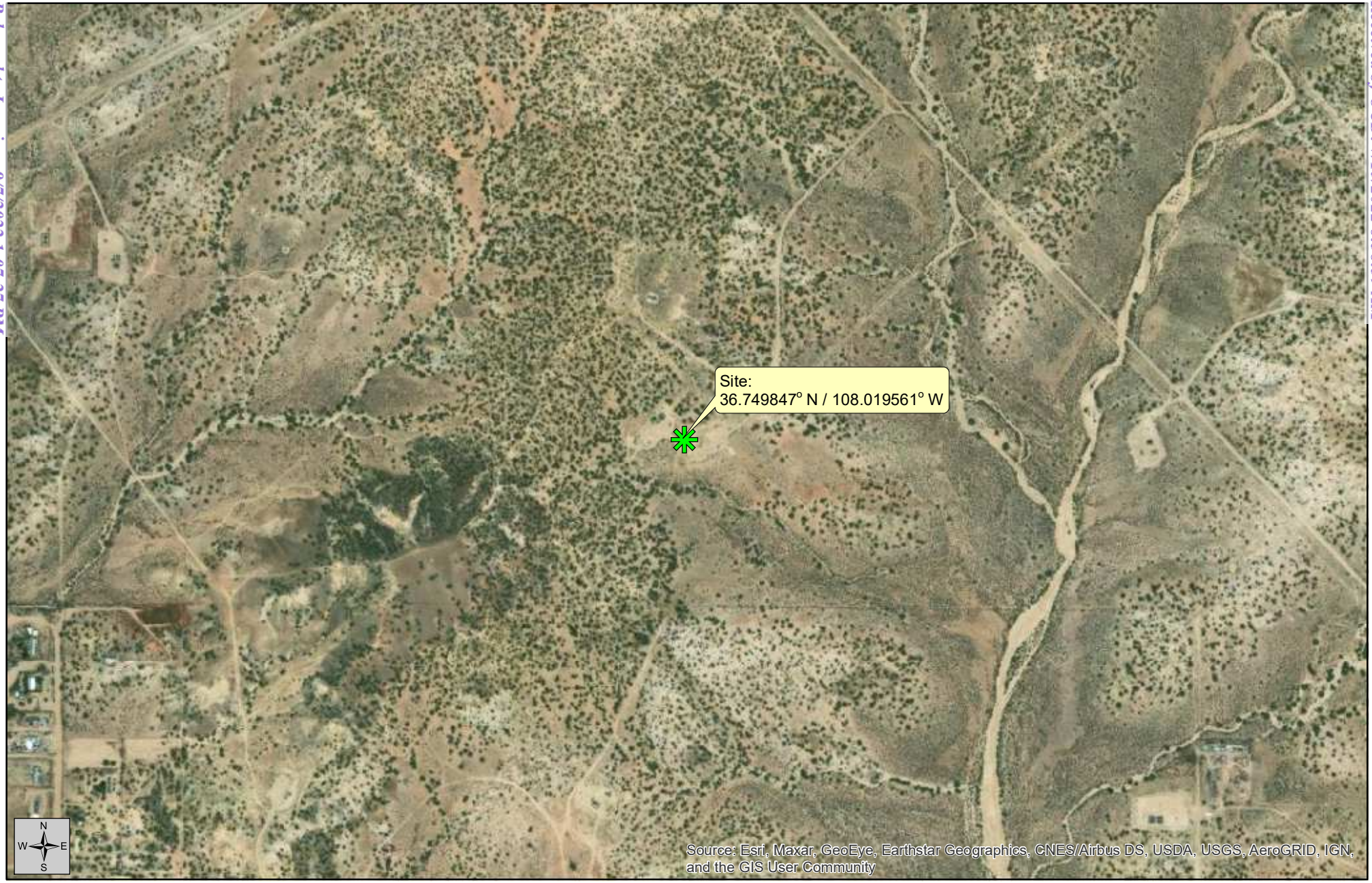


Figure 3
Aerial Map

Status Report - 2nd Quarter 2022

July 5, 2022

1:10,000

0 0.25 0.5 0.75 1 Miles

Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
Hilcorp Energy Company
San Juan County, New Mexico

TIMBERWOLF ENVIRONMENTAL

Created By:
Kevin Cole
TE Project No.: HEC-190009

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Site

Tables

Table A-1. Operation and Maintenance Events
Status Report - 2nd Quarter 2022
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Date	Hour Meter Reading (hr)	Water/Condenstate Recovered (gal)	Maintenance and Activities Performed
04/07/22	1,673	0	• Hilcorp operator performed SVE system O&M checks • All system functions operating correctly
04/19/22	1,927	0	• Hilcorp operator performed SVE system O&M checks • All system functions operating correctly
05/05/22	2,317	0	• Hilcorp operator performed SVE system O&M checks • All system functions operating correctly
05/16/22	2,581	0	• Hilcorp operator performed SVE system O&M checks • All system functions operating correctly
06/09/22	3,144	0	• Hilcorp operator performed SVE system O&M checks • All system functions operating correctly
06/20/22	--	--	• Hilcorp operator took composite gas sample
06/21/22	3,430	0	• Hilcorp operator performed SVE system O&M checks • Repaired leaking rotameter

gal - gallons
hr - hours
-- - none reported

Table A-2. Gas Analysis 06/20/22
Status Report - 2nd Quarter 2022
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Volatiles (mg/m^3)	SVE
Acetone	< 2.38
Allyl Chloride	< 0.501
Benzene	54.3
Benzyl Chloride	< 0.831
Bromodichloromethane	< 1.07
Bromoform	< 4.97
Bromomethane	< 0.621
1,3-Butadiene	< 3.54
Carbon Disulfide	< 0.498
Carbon Tetrachloride	< 1.01
Chlorobenzene	< 0.739
Chlorodifluoromethane	< 0.566
Chloroethane	< 0.422
Chloroform	< 0.779
Chloromethane	< 0.33
2-Chlorotoluene	< 0.825
Cyclohexane	251
Dibromochloromethane	< 1.36
1,2-Dibromoethane	< 1.23
1,2-Dichlorobenzene	< 0.962
1,3-Dichlorobenzene	< 0.962
1,4-Dichlorobenzene	< 0.962
1,2-Dichloroethane	< 0.648
1,1-Dichloroethane	< 0.641
1,1-Dichloroethene	< 0.634
Cis-1,2-Dichloroethene	< 0.634
Trans-1,2-Dichloroethene	< 0.634
1,2-Dichloropropane	< 0.739
Cis-1,3-Dichloropropene	< 0.726
Trans-1,3-Dichloropropene	< 0.726
1,1-Difluoroethane	< 2.16
1,4-Dioxane	< 0.577
Ethanol	2.68
Ethyl acetate	< 0.576
Ethylbenzene	20.3
4-Ethyltoluene	11.9
Trichlorofluoromethane	< 0.899
Dichlorodifluoromethane	< 0.791

Table A-2. Gas Analysis 06/20/22
Status Report - 2nd Quarter 2022
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Volatiles (mg/m^3)	SVE
1,1,2-Trichlorotrifluoroethane	< 1.23
1,2-Dichlorotetrafluoroethane	< 1.12
Heptane	474
Hexachloro-1,3-Butadiene	< 5.38
N-Hexane	254
Isopropylbenzene	2.89
Methylene Chloride	< 0.556
Methyl Butyl Ketone	< 4.09
Methyl Cyclohexane	932
2-Butanone (Mek)	< 2.95
4-Methyl-2-Pentanone (Mibk)	< 4.09
Methyl Methacrylate	< 0.655
Methyl Tert-Butyl Ether	< 0.577
Naphthalene	< 2.64
2-Propanol	55.3
Propene	< 1.72
Styrene	< 0.681
Tert-Amyl Ethyl Ether	< 0.76
1,1,2,2-Tetrachloroethane	< 1.1
Tetrachloroethene	< 1.09
Tetrahydrofuran	< 0.472
Toluene	297
1,2,4-Trichlorobenzene	< 3.73
1,1,1-Trichloroethane	< 0.87
1,1,2-Trichloroethane	< 0.87
Trichloroethene	< 0.857
1,2,3-Trimethylbenzene	0.835
1,2,4-Trimethylbenzene	7.8
1,3,5-Trimethylbenzene	7.9
2,2,4-Trimethylpentane	< 0.747
Vinyl Chloride	< 0.409
Vinyl Bromide	< 0.7
Vinyl Acetate	< 0.563
Total Xylene	181
TPH (GC/MS) Low Fraction	6,030
Oxygen (%)	21.3
Carbon Dioxide (%)	< 2.00
Carbon Monoxide (%)	< 0.500

Table A-2. Gas Analysis 06/20/22
Status Report - 2nd Quarter 2022
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Volatiles (mg/m^3)	SVE
Methane (%)	< 0.400

mg/m3 - milligrams per cubic meter

% - percent

Photographic Log

TIMBERWOLF ENVIRONMENTAL
1920 W. Villa Maria Suite 205
Bryan, TX 77807
(979) 485-9094
www.teamtimberwolf.com

PHOTOGRAPHIC LOG

Project No.:	HEC-190009	**Client:**	Hilcorp Energy Company
Project Name:	Fifield 5 No. 1	**Site Location:**	San Juan County, New Mexico
Task Description:	2nd Quarter 2022 Report	**Date:**	April-June, 2022

Photo No.: 1

Direction: N/A

Comments: View of hour meter from the end of March, 2022.

Note: 1,486 hours.

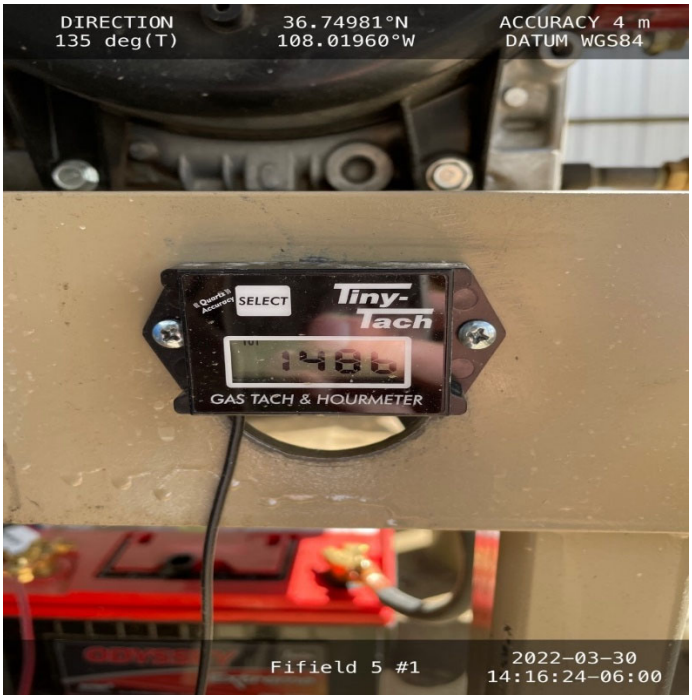
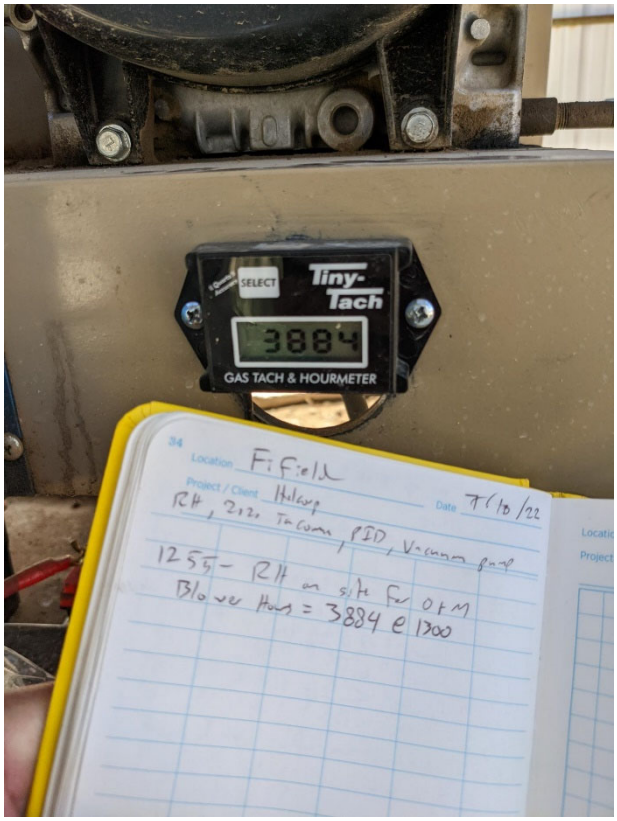


Photo No.: 2

Direction: N/A

Comments: View of hour meter from the July 10, 2022.

Note: 3,884 hours used to back-calculate quarter-end hour reading for 2Q22.



Laboratory Report and Chain-of-custody Documents

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

June 29, 2022

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

RE: Fifield S 001 OrderNo.: 2206A54

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/21/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Pace Analytical®

ANALYTICAL REPORT

June 28, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1507367
Samples Received:	06/22/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

2206A54-001A SVE-1 L1507367-01 Air

	Collected by	Collected date/time	Received date/time
		06/20/22 15:15	06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1884269	800	06/24/22 01:23	06/24/22 01:23	MBF	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1885051	4000	06/24/22 18:22	06/24/22 18:22	DAH	Mt. Juliet, TN
Organic Compounds (GC) by Method D1946	WG1886502	1	06/28/22 14:32	06/28/22 14:32	DBB	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Sample Delivery Group (SDG) Narrative

Sample received in tedlar bag.

Lab Sample ID	Project Sample ID	Method
L1507367-01	2206A54-001A SVE-1	TO-15, D1946

2206A94-001A SVE-1
Collected date/time: 06/20/22 15:15

SAMPLE RESULTS - 01

L1507367

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1000	2380	ND	ND		800	WG1884269
Allyl chloride	107-05-1	76.53	160	501	ND	ND		800	WG1884269
Benzene	71-43-2	78.10	160	511	17000	54300		800	WG1884269
Benzyl Chloride	100-44-7	127	160	831	ND	ND		800	WG1884269
Bromodichloromethane	75-27-4	164	160	1070	ND	ND		800	WG1884269
Bromoform	75-25-2	253	480	4970	ND	ND		800	WG1884269
Bromomethane	74-83-9	94.90	160	621	ND	ND		800	WG1884269
1,3-Butadiene	106-99-0	54.10	1600	3540	ND	ND		800	WG1884269
Carbon disulfide	75-15-0	76.10	160	498	ND	ND		800	WG1884269
Carbon tetrachloride	56-23-5	154	160	1010	ND	ND		800	WG1884269
Chlorobenzene	108-90-7	113	160	739	ND	ND		800	WG1884269
Chloroethane	75-00-3	64.50	160	422	ND	ND		800	WG1884269
Chloroform	67-66-3	119	160	779	ND	ND		800	WG1884269
Chloromethane	74-87-3	50.50	160	330	ND	ND		800	WG1884269
2-Chlorotoluene	95-49-8	126	160	825	ND	ND		800	WG1884269
Cyclohexane	110-82-7	84.20	160	551	72900	251000		800	WG1884269
Dibromochloromethane	124-48-1	208	160	1360	ND	ND		800	WG1884269
1,2-Dibromoethane	106-93-4	188	160	1230	ND	ND		800	WG1884269
1,2-Dichlorobenzene	95-50-1	147	160	962	ND	ND		800	WG1884269
1,3-Dichlorobenzene	541-73-1	147	160	962	ND	ND		800	WG1884269
1,4-Dichlorobenzene	106-46-7	147	160	962	ND	ND		800	WG1884269
1,2-Dichloroethane	107-06-2	99	160	648	ND	ND		800	WG1884269
1,1-Dichloroethane	75-34-3	98	160	641	ND	ND		800	WG1884269
1,1-Dichloroethene	75-35-4	96.90	160	634	ND	ND		800	WG1884269
cis-1,2-Dichloroethene	156-59-2	96.90	160	634	ND	ND		800	WG1884269
trans-1,2-Dichloroethene	156-60-5	96.90	160	634	ND	ND		800	WG1884269
1,2-Dichloropropane	78-87-5	113	160	739	ND	ND		800	WG1884269
cis-1,3-Dichloropropene	10061-01-5	111	160	726	ND	ND		800	WG1884269
trans-1,3-Dichloropropene	10061-02-6	111	160	726	ND	ND		800	WG1884269
1,4-Dioxane	123-91-1	88.10	160	577	ND	ND		800	WG1884269
Ethanol	64-17-5	46.10	1000	1890	1420	2680		800	WG1884269
Ethylbenzene	100-41-4	106	160	694	4680	20300		800	WG1884269
4-Ethyltoluene	622-96-8	120	160	785	2420	11900		800	WG1884269
Trichlorofluoromethane	75-69-4	137.40	160	899	ND	ND		800	WG1884269
Dichlorodifluoromethane	75-71-8	120.92	160	791	ND	ND		800	WG1884269
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	160	1230	ND	ND		800	WG1884269
1,2-Dichlorotetrafluoroethane	76-14-2	171	160	1120	ND	ND		800	WG1884269
Heptane	142-82-5	100	800	3270	116000	474000		4000	WG1885051
Hexachloro-1,3-butadiene	87-68-3	261	504	5380	ND	ND		800	WG1884269
n-Hexane	110-54-3	86.20	504	1780	72100	254000		800	WG1884269
Isopropylbenzene	98-82-8	120.20	160	787	588	2890		800	WG1884269
Methylene Chloride	75-09-2	84.90	160	556	ND	ND		800	WG1884269
Methyl Butyl Ketone	591-78-6	100	1000	4090	ND	ND		800	WG1884269
2-Butanone (MEK)	78-93-3	72.10	1000	2950	ND	ND		800	WG1884269
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1000	4090	ND	ND		800	WG1884269
Methyl methacrylate	80-62-6	100.12	160	655	ND	ND		800	WG1884269
MTBE	1634-04-4	88.10	160	577	ND	ND		800	WG1884269
Naphthalene	91-20-3	128	504	2640	ND	ND		800	WG1884269
2-Propanol	67-63-0	60.10	1000	2460	22500	55300		800	WG1884269
Propene	115-07-1	42.10	1000	1720	ND	ND		800	WG1884269
Styrene	100-42-5	104	160	681	ND	ND		800	WG1884269
1,1,2,2-Tetrachloroethane	79-34-5	168	160	1100	ND	ND		800	WG1884269
Tetrachloroethylene	127-18-4	166	160	1090	ND	ND		800	WG1884269
Tetrahydrofuran	109-99-9	72.10	160	472	ND	ND		800	WG1884269
Toluene	108-88-3	92.10	2000	7530	78900	297000		4000	WG1885051
1,2,4-Trichlorobenzene	120-82-1	181	504	3730	ND	ND		800	WG1884269

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	160	870	ND	ND		800	WG1884269
1,1,2-Trichloroethane	79-00-5	133	160	870	ND	ND		800	WG1884269
Trichloroethylene	79-01-6	131	160	857	ND	ND		800	WG1884269
1,2,4-Trimethylbenzene	95-63-6	120	160	785	1590	7800		800	WG1884269
1,3,5-Trimethylbenzene	108-67-8	120	160	785	1610	7900		800	WG1884269
2,2,4-Trimethylpentane	540-84-1	114.22	160	747	ND	ND		800	WG1884269
Vinyl chloride	75-01-4	62.50	160	409	ND	ND		800	WG1884269
Vinyl Bromide	593-60-2	106.95	160	700	ND	ND		800	WG1884269
Vinyl acetate	108-05-4	86.10	160	563	ND	ND		800	WG1884269
m&p-Xylene	1330-20-7	106	320	1390	41700	181000		800	WG1884269
o-Xylene	95-47-6	106	160	694	7690	33300		800	WG1884269
TPH (GC/MS) Low Fraction	8006-61-9	101	160000	661000	1460000	6030000		800	WG1884269
1,1-Difluoroethane	75-37-6	66.05	800	2160	ND	ND		800	WG1884269
1,2,3-Trimethylbenzene	526-73-8	120.10	160	786	170	835		800	WG1884269
Chlorodifluoromethane	75-45-6	86.50	160	566	ND	ND		800	WG1884269
Ethyl acetate	141-78-6	88	160	576	ND	ND		800	WG1884269
Methyl Cyclohexane	108-87-2	98.1860	800	3210	232000	932000		4000	WG1885051
Tert-Amyl Ethyl Ether	919-94-8	116.20	160	760	ND	ND		800	WG1884269
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*108*				WG1884269
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.0*				WG1885051

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL %	Result %	Qualifier	Dilution	Batch
Oxygen	7782-44-7	32	5.00	21.3		1	WG1886502
Carbon Monoxide	630-08-0	28	2.00	ND		1	WG1886502
Carbon Dioxide	124-38-9	44.01	0.500	ND		1	WG1886502
Methane	74-82-8	16	0.400	ND		1	WG1886502

Method Blank (MB)

(MB) R3806646-3 06/23/22 10:15

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	0.0717	J	0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethanol	U		0.265	1.25
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

Method Blank (MB)

(MB) R3806646-3 06/23/22 10:15

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	0.0984	J	0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.327	J	0.0932	1.25
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
TPH (GC/MS) Low Fraction	U		39.7	200
1,1-Difluoroethane	U		0.129	1.00
1,2,3-Trimethylbenzene	U		0.0805	0.200
Chlorodifluoromethane	U		0.131	0.200
Ethyl acetate	U		0.100	0.200
Tert-Amyl Ethyl Ether	U		0.0778	0.200
(S) 1,4-Bromofluorobenzene	*92.5*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3806646-1 06/23/22 08:49 • (LCSD) R3806646-2 06/23/22 09:32

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	3.75	3.59	3.55	95.7	94.7	70.0-130			1.12	25
Allyl Chloride	3.75	2.90	3.02	77.3	80.5	70.0-130			4.05	25
Benzene	3.75	4.06	4.06	108	108	70.0-130			0.000	25
Benzyl Chloride	3.75	4.96	4.84	132	129	70.0-152			2.45	25
Bromodichloromethane	3.75	4.02	4.00	107	107	70.0-130			0.499	25
Bromoform	3.75	4.10	3.94	109	105	70.0-130			3.98	25
Bromomethane	3.75	3.83	3.89	102	104	70.0-130			1.55	25
1,3-Butadiene	3.75	3.60	3.79	96.0	101	70.0-130			5.14	25
Carbon disulfide	3.75	3.68	3.67	98.1	97.9	70.0-130			0.272	25
Carbon tetrachloride	3.75	3.96	3.96	106	106	70.0-130			0.000	25
Chlorobenzene	3.75	4.36	4.43	116	118	70.0-130			1.59	25
Chloroethane	3.75	3.83	3.90	102	104	70.0-130			1.81	25
Chloroform	3.75	3.81	3.83	102	102	70.0-130			0.524	25
Chloromethane	3.75	3.69	3.84	98.4	102	70.0-130			3.98	25
2-Chlorotoluene	3.75	4.13	4.18	110	111	70.0-130			1.20	25
Cyclohexane	3.75	3.84	3.91	102	104	70.0-130			1.81	25
Dibromochloromethane	3.75	4.31	4.27	115	114	70.0-130			0.932	25
1,2-Dibromoethane	3.75	4.22	4.24	113	113	70.0-130			0.473	25
1,2-Dichlorobenzene	3.75	4.40	4.46	117	119	70.0-130			1.35	25
1,3-Dichlorobenzene	3.75	4.27	4.21	114	112	70.0-130			1.42	25
1,4-Dichlorobenzene	3.75	4.41	4.40	118	117	70.0-130			0.227	25
1,2-Dichloroethane	3.75	3.99	4.02	106	107	70.0-130			0.749	25
1,1-Dichloroethane	3.75	3.83	3.87	102	103	70.0-130			1.04	25
1,1-Dichloroethene	3.75	3.86	3.86	103	103	70.0-130			0.000	25
cis-1,2-Dichloroethene	3.75	3.85	3.79	103	101	70.0-130			1.57	25
trans-1,2-Dichloroethene	3.75	3.80	3.81	101	102	70.0-130			0.263	25
1,2-Dichloropropane	3.75	3.94	3.97	105	106	70.0-130			0.759	25
cis-1,3-Dichloropropene	3.75	4.18	4.06	111	108	70.0-130			2.91	25
trans-1,3-Dichloropropene	3.75	4.07	4.21	109	112	70.0-130			3.38	25
1,4-Dioxane	3.75	4.16	4.24	111	113	70.0-140			1.90	25
Ethanol	3.75	3.34	3.50	89.1	93.3	55.0-148			4.68	25
Ethylbenzene	3.75	4.12	4.06	110	108	70.0-130			1.47	25
4-Ethyltoluene	3.75	4.29	4.26	114	114	70.0-130			0.702	25
Trichlorofluoromethane	3.75	3.97	3.99	106	106	70.0-130			0.503	25
Dichlorodifluoromethane	3.75	3.93	3.87	105	103	64.0-139			1.54	25
1,1,2-Trichlorotrifluoroethane	3.75	3.99	4.05	106	108	70.0-130			1.49	25
1,2-Dichlorotetrafluoroethane	3.75	3.96	3.90	106	104	70.0-130			1.53	25
Hexachloro-1,3-butadiene	3.75	4.43	4.33	118	115	70.0-151			2.28	25
n-Hexane	3.75	3.81	3.89	102	104	70.0-130			2.08	25
Isopropylbenzene	3.75	4.20	4.20	112	112	70.0-130			0.000	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3806646-1 06/23/22 08:49 • (LCSD) R3806646-2 06/23/22 09:32

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methylene Chloride	3.75	3.38	3.26	90.1	86.9	70.0-130			3.61	25
Methyl Butyl Ketone	3.75	4.36	4.48	116	119	70.0-149			2.71	25
Methyl Ethyl Ketone	3.75	3.94	3.80	105	101	70.0-130			3.62	25
4-Methyl-2-pentanone (MIBK)	3.75	4.29	4.21	114	112	70.0-139			1.88	25
Methyl Methacrylate	3.75	3.89	4.08	104	109	70.0-130			4.77	25
MTBE	3.75	3.92	3.90	105	104	70.0-130			0.512	25
Naphthalene	3.75	3.66	3.57	97.6	95.2	70.0-159			2.49	25
2-Propanol	3.75	3.76	3.72	100	99.2	70.0-139			1.07	25
Propene	3.75	3.35	3.37	89.3	89.9	64.0-144			0.595	25
Styrene	3.75	4.21	4.15	112	111	70.0-130			1.44	25
1,1,2,2-Tetrachloroethane	3.75	3.95	3.94	105	105	70.0-130			0.253	25
Tetrachloroethylene	3.75	4.43	4.45	118	119	70.0-130			0.450	25
Tetrahydrofuran	3.75	3.82	3.86	102	103	70.0-137			1.04	25
1,2,4-Trichlorobenzene	3.75	5.08	4.95	135	132	70.0-160			2.59	25
1,1,1-Trichloroethane	3.75	3.86	3.91	103	104	70.0-130			1.29	25
1,1,2-Trichloroethane	3.75	4.10	4.28	109	114	70.0-130			4.30	25
Trichloroethylene	3.75	4.07	4.16	109	111	70.0-130			2.19	25
1,2,4-Trimethylbenzene	3.75	4.31	4.19	115	112	70.0-130			2.82	25
1,3,5-Trimethylbenzene	3.75	4.29	4.37	114	117	70.0-130			1.85	25
2,2,4-Trimethylpentane	3.75	3.83	3.83	102	102	70.0-130			0.000	25
Vinyl chloride	3.75	3.86	4.00	103	107	70.0-130			3.56	25
Vinyl Bromide	3.75	4.04	4.05	108	108	70.0-130			0.247	25
Vinyl acetate	3.75	3.59	3.63	95.7	96.8	70.0-130			1.11	25
m&p-Xylene	7.50	8.26	8.47	110	113	70.0-130			2.51	25
o-Xylene	3.75	4.07	4.00	109	107	70.0-130			1.73	25
TPH (GC/MS) Low Fraction	203	209	208	103	102	70.0-130			0.480	25
1,1-Difluoroethane	3.75	3.59	3.67	95.7	97.9	70.0-130			2.20	25
1,2,3-Trimethylbenzene	3.75	4.34	4.21	116	112	70.0-130			3.04	25
Chlorodifluoromethane	3.75	3.75	3.75	100	100	70.0-130			0.000	25
Ethyl acetate	3.75	3.97	3.52	106	93.9	70.0-130			12.0	25
Tert-Amyl Ethyl Ether	3.75	3.95	4.15	105	111	70.0-130			4.94	25
(S) 1,4-Bromofluorobenzene				*93.2*	*91.1*	*60.0-140*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3807323-3 06/24/22 09:55

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Heptane	U		0.104	0.200
Toluene	U		0.0870	0.500
Methyl Cyclohexane	U		0.0813	0.200
(S) 1,4-Bromofluorobenzene	*95.5*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3807323-1 06/24/22 08:37 • (LCSD) R3807323-2 06/24/22 09:17

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Heptane	3.75	3.51	3.61	93.6	96.3	70.0-130			2.81	25
Toluene	3.75	3.74	3.85	99.7	103	70.0-130			2.90	25
Methyl Cyclohexane	3.75	3.76	3.89	100	104	70.0-130			3.40	25
(S) 1,4-Bromofluorobenzene				*99.0*	*98.6*	*60.0-140*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3808524-3 06/28/22 12:01

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Oxygen	U		0.225	5.00
Carbon Monoxide	U		0.665	2.00
Carbon Dioxide	U		0.121	0.500
Methane	U		0.0584	0.400

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3808524-1 06/28/22 11:45 • (LCSD) R3808524-2 06/28/22 11:53

Analyte	Spike Amount %	LCS Result %	LCSD Result %	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Oxygen	20.0	20.5	20.6	103	103	70.0-130			0.487	20
Carbon Monoxide	2.50	2.67	2.67	107	107	70.0-130			0.000	20
Carbon Dioxide	2.50	2.62	2.63	105	105	70.0-130			0.381	20
Methane	2.00	2.19	2.20	110	110	70.0-130			0.456	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

A213

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

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

L1507367

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2206A54-001A	~~SVE Sample~~ SVE-1	TEDLAR	Air	6/20/2022 3:15:00 PM	2	CO2, Oxygen, TO-15 + TPH -01

TO 6.24.22

5755 8043 3157

Sample Receipt Checklist:

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

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: CMC	Date: 6/21/2022	Time: 8:40 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 6/22/22	Time: 900
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

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 Amb °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: 2206A54 RcptNo: 1

Received By: Cheyenne Cason 6/21/2022 7:00:00 AM

Completed By: Cheyenne Cason 6/21/2022 8:38:37 AM

Reviewed By: JA 6/21/22

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: KPG 6.21.22

Special Handling (if applicable)

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

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	NA	Good	Yes			

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

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

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Fifield S #001

Project #:

Project Manager: Kate Kautman

Sampler: Brandon Sinclair

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): NA (°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. 2206A0354
6-20	1515	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)	TO-15 VOC	TO-15 TPH&GRO	O_2 & CO_2 D1946			
										✓	✓	✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/20	1725				6/20/22	1725
6/22	1814				Date	Time
			amc courier		6/21/22	0700

Remarks: cc: kkautman@hilcorp.com

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

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

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

CONDITIONS

Action 125737

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 125737
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue with O & M schedule. 2. Collect quarterly soil vapor sample for VOCs, organic compounds, O2, and CO2. 3. Submit next quarterly report by October 31, 2022.	9/7/2022