



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

REVIEWED**By Nelson Velez at 1:02 pm, Feb 28, 2023**

1. Continue further actions as stated in report.
2. Submit next quarterly report by May 1, 2023.

January 13, 2023

Mr. Nelson Velez, Environmental Specialist – Advanced
New Mexico Oil Conservation Division – District 3
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: Status Report – 4th 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. Velez:

On behalf of Hilcorp Energy Company (Hilcorp), Timberwolf Environmental, LLC (Timberwolf) presents this report to document activities conducted during the 4th quarter 2022 (4Q22) 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

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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 pulley 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 bypassed 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 – 1st 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 – 1st Quarter 2022*, dated 04/15/22
- *Status Report – 2nd Quarter 2022*, dated 07/14/22
- *Status Report – 3rd Quarter 2022*, dated 10/14/22

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SVE System Operations

The SVE system is equipped with four independent legs (i.e., Leg 1, Leg 2, Leg 3, and Leg 4). Leg 1 provides vacuum to the shallow wells and Legs 2, 3, and 4 provide vacuum extraction to the deep SVE wells. The automation panel is currently by-passed, and the system has run with all legs open; however, damage to certain parts of the manifold has necessitated the shut-in of Legs 2 and 4.

Water and condensate are recovered with a moisture separator, which is fitted with a 1-inch PVC pipe to transfer fluids to an open-top tank fitted with bird netting. No water or condensate was recovered during 4Q22. SVE system runtime for 4Q22 is documented in Table 1 below.

Table 1. System Runtime – 4Q22

Date	Hour Meter
09/23/22	5,670
10/03/22	5,910
10/20/22	6,316
11/05/22	6,702
11/16/22	6,967
12/10/22	7,542
12/24/22	NC
Total Runtime*	2,187

NC – not collected due to hour meter failure

*Total runtime based on Cygnet remote monitoring data

An hour reading was not recorded during the 12/24/22 O&M event due to an hour meter failure. Runtime between 9/23/22 and 12/10/22 was 99 percent (%) based on hour meter readings. Cygnet remote monitoring data was used to verify system runtime for the quarter (i.e., 99%). Photographs of relevant meter readings are documented in the attached Photographic Log.

During 4Q22, Hilcorp personnel conducted six (6) operational and maintenance (O&M) events in total. A field log of O&M events and maintenance performed is provided in the Attached Table A-1.

Collection and Analysis of Quarterly Soil-Gas Sample

On 12/12/22, a composite soil-gas sample was collected from SVE Legs 1 and 3 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 soil-gas sample (i.e., SVE-1) was transported to Hall Environmental and Analytical Laboratory (HEAL) in Albuquerque, New Mexico. HEAL analyzed the sample for volatile organic compounds (VOCs) and subcontracted other gas analysis to Energy Laboratories in Billings, Montana. All sample transfers were conducted under proper chain-of-custody protocol.

The sample was analyzed for VOCs using EPA Method 8260B and Organic Compounds (GC) by GPA 2261-95. The laboratory report and chain-of-custody documents are attached.

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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 – 12/12/22

Constituents	SVE-1
Volatile Organic Compounds, mg/m³	
Benzene	45
Ethylbenzene	7.5
Isopropylbenzene	0.96
Toluene	180
1,2,4-Trimethylbenzene	2.8
1,3,5-Trimethylbenzene	2.8
Total Xylenes	71
TPH (GC/MS) Low Fraction (i.e., GRO)	7,200
Organic Compounds, Mol %	
Oxygen	21.77
Carbon Dioxide	0.18

mg/m³ – milligrams per cubic meter

Mol % – mole percent

TPH – total petroleum hydrocarbons

GRO – gasoline range organics

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 4Q22 are presented in Table 3 below.

Table 3. Mass Removal and Associated Volume – 4Q22

Constituent	Mass Removal (kg) ¹	Total Mass Removed (lbs) ²	Recovered Volume (bbl)
Benzene	3.98	8.76	NC
Toluene	15.92	35.02	NC
Ethylbenzene	0.66	1.46	NC
Xylene	6.28	13.81	NC
GRO	636.73	1,400.80	5.20

¹Calculation = minutes ran * CFM * Concentration (mg/m³) * 1 M³/35.3147 ft³ * 1g/1000 mg * 1 kg/1000 g

²Calculation = [Mass Removal] * 2.2 lbs/kg

GRO = from TPH (GC/MS) Low Fraction (i.e., gasoline range organics)

kg – kilograms

lbs – pounds

bbl – barrel

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 between 09/23/22 and 12/10/22 and Cygnet remote monitoring data.

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Summary

The SVE system runtime during 4Q22 was 99.0% of the total available hours during the period. Due to a failure of the system hour meter, runtime hours have been verified using Cygnet remote monitoring data. The system hour meter has been replaced.

Mass removal calculations indicated the following recovery during the quarter:

- 5.20 bbl of GRO
- 8.76 lbs of benzene
- 35.02 lbs of toluene
- 1.46 lbs of ethylbenzene
- 13.81 lbs of xylene

Further Actions – 1st Quarter 2023

During 1Q23, 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 for laboratory analysis
- Replace hour meter
- Prepare a 1Q23 status report

If you have any questions regarding this report, please call us at (979) 324-2139.

Sincerely,
Timberwolf Environmental, LLC



Kevin Cole
Project Manager



Jim Foster
President

Attachments: Figures
Attached Tables
Photographic Log
Laboratory Report and Chain-of-Custody Documents

cc: Kate Kaufman, Hilcorp Energy Company

Figures

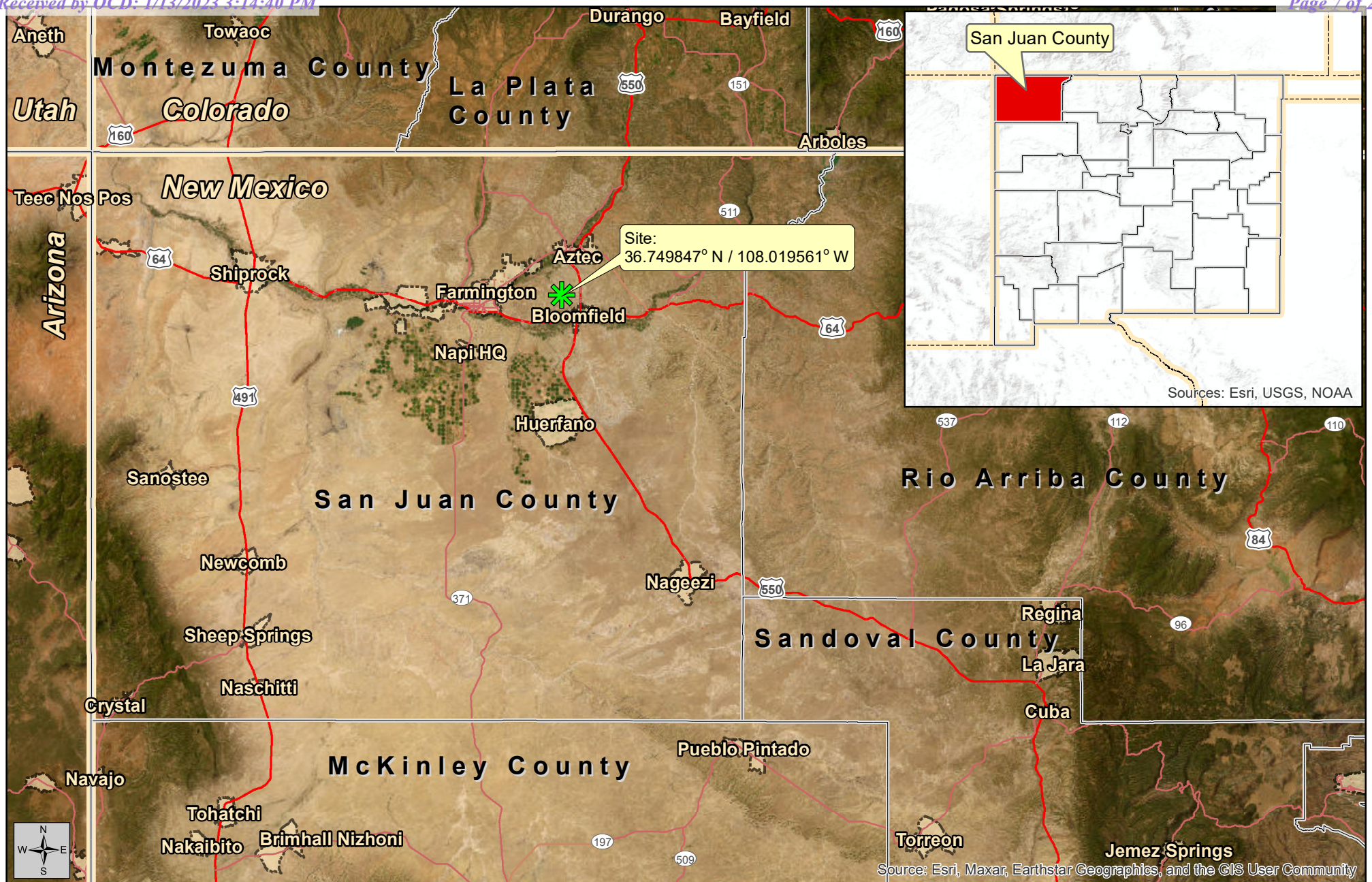


Figure 1
Site Location Map

Status Report - 4th Quarter 2022

December 22, 2022



Created By:
Brett Berno
TE Project No.: HEC-190009

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

Datum: NAD83
Imagery Source: ESRI
Vector Source: ESRI and TE

Site

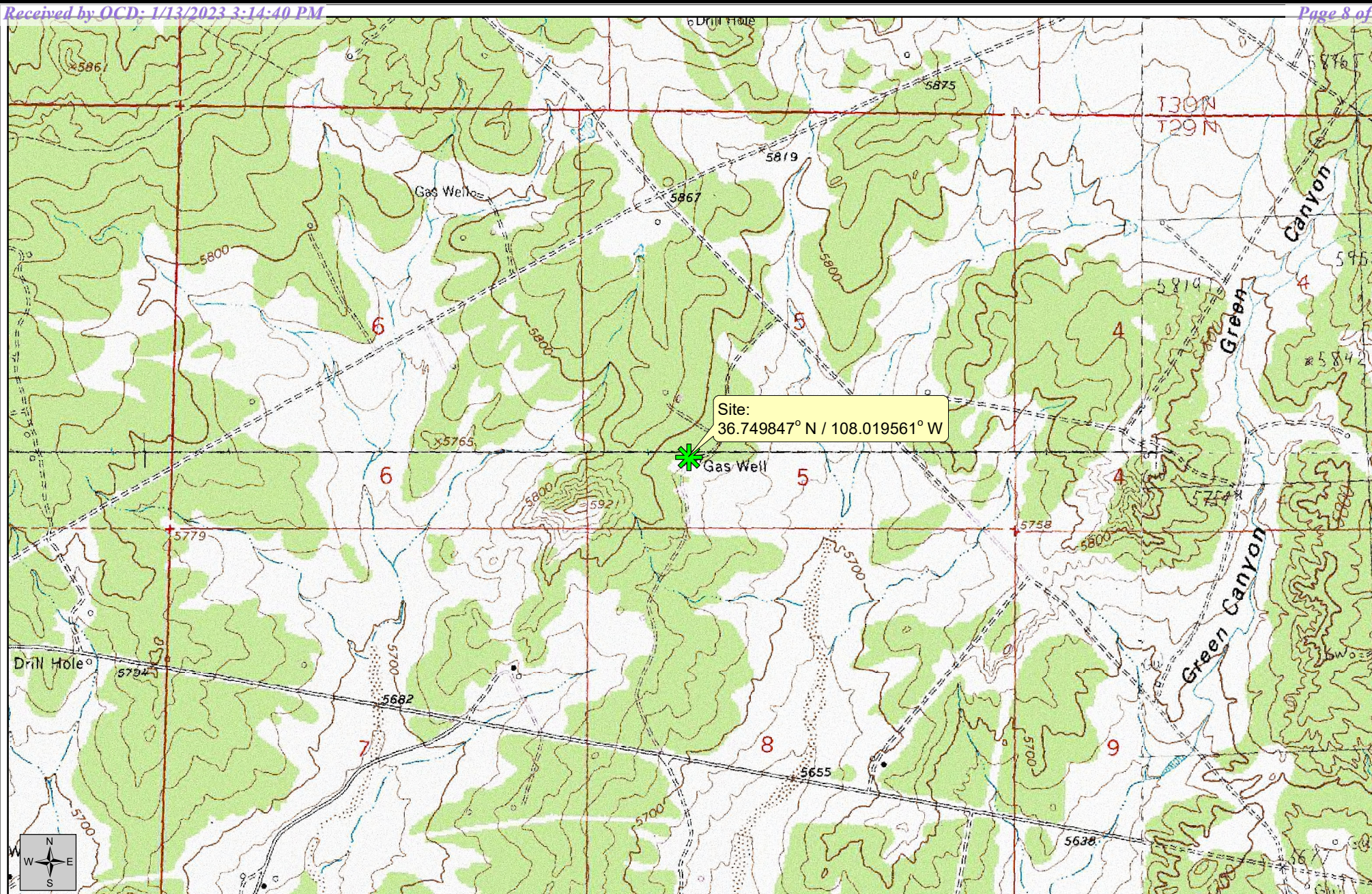


Figure 2
Topographic Map

Status Report - 4th Quarter 2022

December 22, 2022



Created By:
Brett Berno
TE Project No.: HEC-190009

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

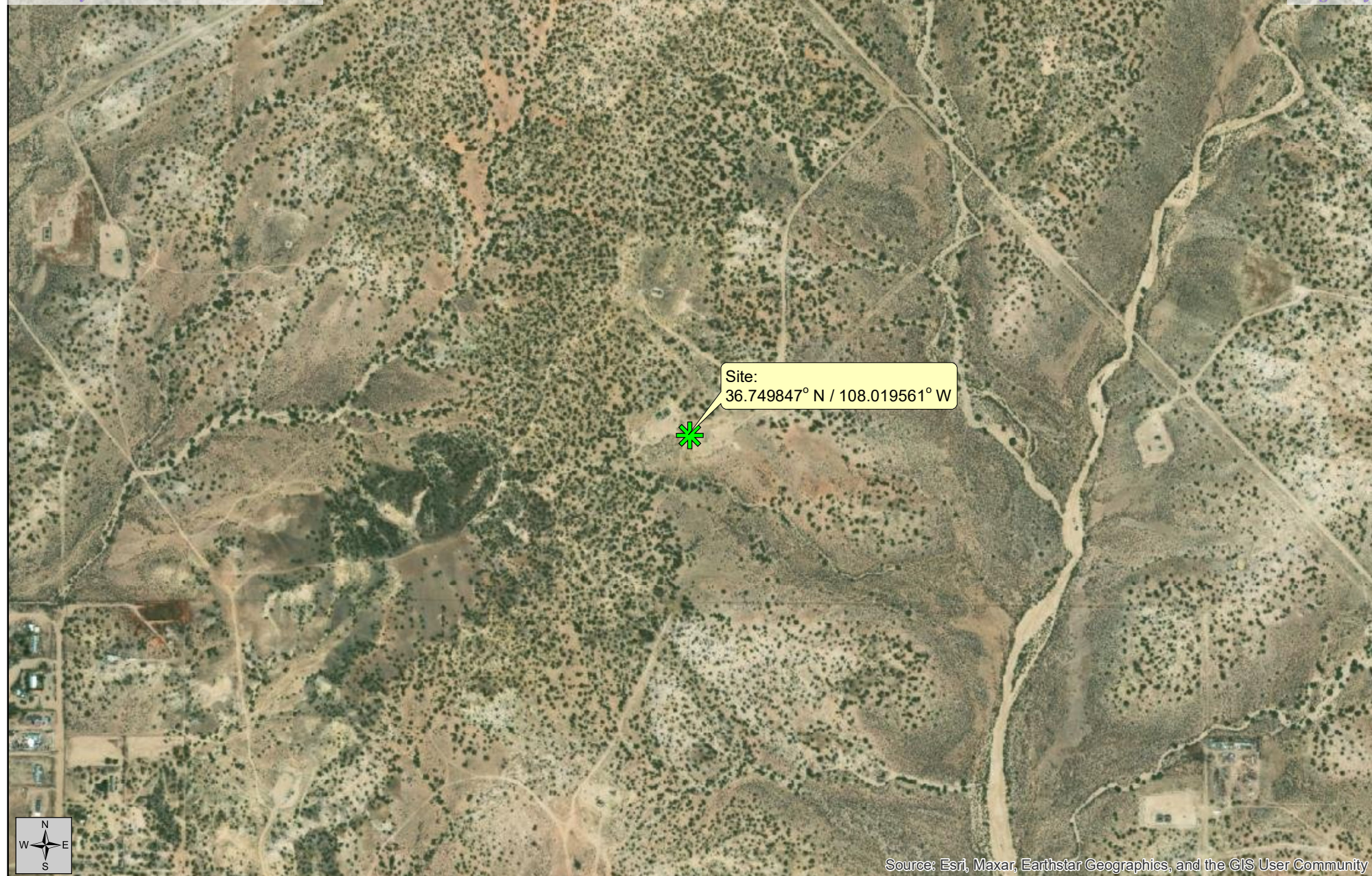


Figure 3
Aerial Map

Status Report - 4th Quarter 2022

December 22, 2022



Created By:
Brett Berno
TE Project No.: HEC-190009

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

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

 **Site**

Attached Tables

**Table A-1. Operation and Maintenance Events
Status Report - 3rd Quarter 2022
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico**

Date	Hour Meter (hrs)	Water/Condensate Recovered (gal)	Maintenance Performed
10/03/22	5,910	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks
10/20/22	6,316	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks
11/05/22	6,702	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks
11/16/22	6,967	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks
12/10/22	7,542	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks
12/24/22	NC	0	• Brandon Sinclair with Hilcorp performed SVE system O&M checks

gal – gallons

hrs – hours

NC - not collected due to hour meter failure

Table A-2. Soil-Gas Analysis - 12/05/22
Status Report - 4th Quarter 2022
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Volatiles	SVE ($\mu\text{g}/\text{m}^3$)
Acetone	< 5,000
Benzene	45,000
Bromodichloromethane	< 500
Bromoform	< 500
Bromomethane	< 1,000
Carbon disulfide	< 5,000
Carbon tetrachloride	< 500
Chlorobenzene	< 500
Chloroethane	< 1,000
Chloroform	< 500
Chloromethane	< 500
2-Chlorotoluene	< 500
Cyclohexane	--
Dibromochloromethane	< 500
1,2-Dibromoethane	< 500
1,2-Dichlorobenzene	< 500
1,3-Dichlorobenzene	< 500
1,4-Dichlorobenzene	< 500
1,2-Dichloroethane	< 500
1,1-Dichloroethane	< 500
1,1-Dichloroethene	< 500
cis-1,2-Dichloroethene	< 500
trans-1,2-Dichloroethene	< 500
1,2-Dichloropropane	< 500
cis-1,3-Dichloropropene	< 500
trans-1,3-Dichloropropene	< 500
Ethylbenzene	7,500
Trichlorofluoromethane	< 500
Dichlorodifluoromethane	< 500
Heptane	--
Hexachloro-1,3-butadiene	< 500
n-Hexane	--
Isopropylbenzene	960
Methylene Chloride	< 1,500
2-Butanone (MEK)	< 5,000
4-Methyl-2-pentanone (MIBK)	< 5,000
MTBE	< 500
Naphthalene	< 1,000
Styrene	< 500
1,1,2,2-Tetrachloroethane	< 500
Toluene	180,000

Table A-2. Soil-Gas Analysis - 12/05/22
Status Report - 4th Quarter 2022
Fifield 5 No. 1 (OCD Incident No. NVF1718155324)
San Juan County, New Mexico

Volatiles	SVE ($\mu\text{g}/\text{m}^3$)
1,2,4-Trichlorobenzene	< 500
1,1,1-Trichloroethane	< 500
1,1,2-Trichloroethane	< 500
1,2,4-Trimethylbenzene	2,800
1,3,5-Trimethylbenzene	2,800
2,2,4-Trimethylpentane	--
Vinyl chloride	< 500
Total Xylenes	71,000
TPH (GC/MS) Low Fraction	7,200,000
Methyl Cyclohexane	--
Oxygen	21.77 (Mol %)
Carbon Dioxide	0.18 (Mol %)

$\mu\text{g}/\text{m}^3$ – Micrograms per cubic meter (unless otherwise noted)

-- – Analyte not reported

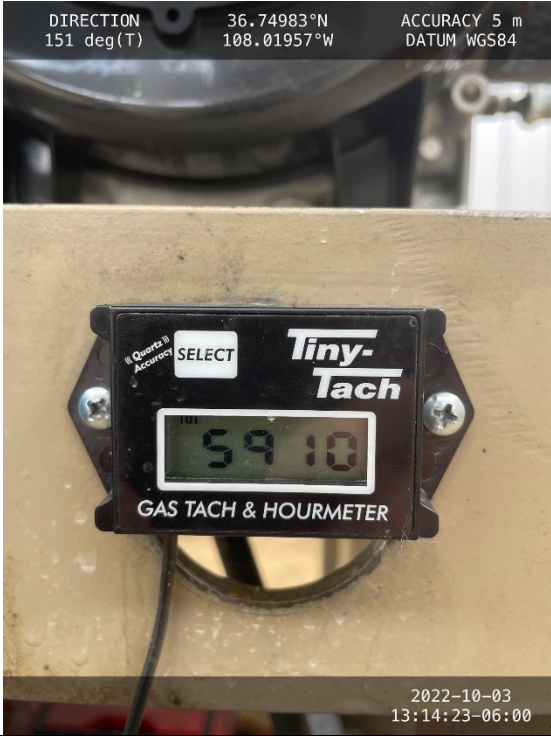

Mol % – mole percent

Photographic Log



1115 Welsh Ave., Suite B
College Station, TX 77840
979.324.2139
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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:	Status Report – 4 th Quarter 2022	Date:	October – December, 2022
Photo No.: 1			
Direction: N/A			
Comments: View of hour meter on 10/03/22.			
Photo No.: 2			
Direction: N/A			
Comments: View of hour meter on 12/10/22.			

Laboratory Report and Chain-of-Custody Documents



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

January 03, 2023

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

RE: Fifield 5 1

OrderNo.: 2212732

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/13/2022 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2212732

Date Reported: 1/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SVE-1

Project: Fifield 5 1

Collection Date: 12/12/2022 1:00:00 PM

Lab ID: 2212732-001

Matrix: AIR

Received Date: 12/13/2022 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: CCM
Benzene	45	0.50		µg/L	5	12/21/2022 3:23:00 PM
Toluene	180	5.0		µg/L	50	12/21/2022 3:00:00 PM
Ethylbenzene	7.5	0.50		µg/L	5	12/21/2022 3:23:00 PM
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,2,4-Trimethylbenzene	2.8	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,3,5-Trimethylbenzene	2.8	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Naphthalene	ND	1.0		µg/L	5	12/21/2022 3:23:00 PM
1-Methylnaphthalene	ND	2.0		µg/L	5	12/21/2022 3:23:00 PM
2-Methylnaphthalene	ND	2.0		µg/L	5	12/21/2022 3:23:00 PM
Acetone	ND	5.0		µg/L	5	12/21/2022 3:23:00 PM
Bromobenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Bromodichloromethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Bromoform	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Bromomethane	ND	1.0		µg/L	5	12/21/2022 3:23:00 PM
2-Butanone	ND	5.0		µg/L	5	12/21/2022 3:23:00 PM
Carbon disulfide	ND	5.0		µg/L	5	12/21/2022 3:23:00 PM
Carbon tetrachloride	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Chlorobenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Chloroethane	ND	1.0		µg/L	5	12/21/2022 3:23:00 PM
Chloroform	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Chloromethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
2-Chlorotoluene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
4-Chlorotoluene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
cis-1,2-DCE	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
cis-1,3-Dichloropropene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,2-Dibromo-3-chloropropane	ND	1.0		µg/L	5	12/21/2022 3:23:00 PM
Dibromochloromethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Dibromomethane	ND	1.0		µg/L	5	12/21/2022 3:23:00 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Dichlorodifluoromethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,1-Dichloroethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,1-Dichloroethene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,2-Dichloropropane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,3-Dichloropropane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
2,2-Dichloropropane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Page 1 of 2

Analytical Report

Lab Order 2212732

Date Reported: 1/3/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: SVE-1

Project: Fifield 5 1

Collection Date: 12/12/2022 1:00:00 PM

Lab ID: 2212732-001

Matrix: AIR

Received Date: 12/13/2022 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: CCM
1,1-Dichloropropene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Hexachlorobutadiene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
2-Hexanone	ND	5.0		µg/L	5	12/21/2022 3:23:00 PM
Isopropylbenzene	0.96	0.50		µg/L	5	12/21/2022 3:23:00 PM
4-Isopropyltoluene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
4-Methyl-2-pentanone	ND	5.0		µg/L	5	12/21/2022 3:23:00 PM
Methylene chloride	ND	1.5		µg/L	5	12/21/2022 3:23:00 PM
n-Butylbenzene	ND	1.5		µg/L	5	12/21/2022 3:23:00 PM
n-Propylbenzene	0.87	0.50		µg/L	5	12/21/2022 3:23:00 PM
sec-Butylbenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Styrene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
tert-Butylbenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Tetrachloroethene (PCE)	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
trans-1,2-DCE	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
trans-1,3-Dichloropropene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Trichloroethene (TCE)	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Trichlorofluoromethane	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
1,2,3-Trichloropropane	ND	1.0		µg/L	5	12/21/2022 3:23:00 PM
Vinyl chloride	ND	0.50		µg/L	5	12/21/2022 3:23:00 PM
Xylenes, Total	71	0.75		µg/L	5	12/21/2022 3:23:00 PM
Surr: Dibromofluoromethane	87.1	70-130		%Rec	5	12/21/2022 3:23:00 PM
Surr: 1,2-Dichloroethane-d4	74.8	70-130		%Rec	5	12/21/2022 3:23:00 PM
Surr: Toluene-d8	146	70-130	S	%Rec	5	12/21/2022 3:23:00 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	5	12/21/2022 3:23:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	7200	250		µg/L	50	12/21/2022 3:00:00 PM
Surr: BFB	91.3	70-130		%Rec	50	12/21/2022 3:00:00 PM

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.

B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Page 2 of 2



ANALYTICAL SUMMARY REPORT

December 30, 2022

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

Work Order: B22121292 Quote ID: B15626

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 12/15/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B22121292-001	2212732-001B, SVE-1	12/12/22 13:00	12/15/22	Air	Air Correction Calculations Appearance and Comments Calculated Properties GPM @ std cond./1000 cu. ft., moist. Free Natural Gas Analysis Specific Gravity @ 60/60

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

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

Report Approved By:



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www.energylab.com

Billings, MT 800.735.4489 • Casper, WY 888.235.0515
Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B22121292-001
Client Sample ID: 2212732-001B, SVE-1

Report Date: 12/30/22
Collection Date: 12/12/22 13:00
DateReceived: 12/15/22
Matrix: Air

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
GAS CHROMATOGRAPHY ANALYSIS REPORT							
Oxygen	21.77	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Nitrogen	78.05	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Carbon Dioxide	0.18	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Hydrogen Sulfide	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Methane	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Ethane	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Propane	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Isobutane	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
n-Butane	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Isopentane	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
n-Pentane	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Hexanes plus	<0.01	Mol %		0.01		GPA 2261-95	12/19/22 12:10 / jrj
Propane	< 0.001	gpm		0.001		GPA 2261-95	12/19/22 12:10 / jrj
Isobutane	< 0.001	gpm		0.001		GPA 2261-95	12/19/22 12:10 / jrj
n-Butane	< 0.001	gpm		0.001		GPA 2261-95	12/19/22 12:10 / jrj
Isopentane	< 0.001	gpm		0.001		GPA 2261-95	12/19/22 12:10 / jrj
n-Pentane	< 0.001	gpm		0.001		GPA 2261-95	12/19/22 12:10 / jrj
Hexanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/19/22 12:10 / jrj
GPM Total	< 0.001	gpm		0.001		GPA 2261-95	12/19/22 12:10 / jrj
GPM Pentanes plus	< 0.001	gpm		0.001		GPA 2261-95	12/19/22 12:10 / jrj

CALCULATED PROPERTIES

Gross BTU per cu ft @ Std Cond. (HHV)	ND	1	GPA 2261-95	12/19/22 12:10 / jrj
Net BTU per cu ft @ std cond. (LHV)	ND	1	GPA 2261-95	12/19/22 12:10 / jrj
Pseudo-critical Pressure, psia	546	1	GPA 2261-95	12/19/22 12:10 / jrj
Pseudo-critical Temperature, deg R	239	1	GPA 2261-95	12/19/22 12:10 / jrj
Specific Gravity @ 60/60F	0.999	0.001	D3588-81	12/19/22 12:10 / jrj
Air, %	99.45	0.01	GPA 2261-95	12/19/22 12:10 / jrj

- The analysis was not corrected for air.

COMMENTS

- 12/19/22 12:10 / 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 RL - Analyte Reporting Limit
Definitions: QCL - Quality Control Limit

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Work Order: B22121292

Report Date: 12/30/22

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: GPA 2261-95									Batch: R393977	
Lab ID: B22121289-001ADUP 12 Sample Duplicate									Run: GCNGA-B_221219A 12/19/22 11:12	
Oxygen		21.7	Mol %	0.01				0.0	20	
Nitrogen		78.0	Mol %	0.01				0.0	20	
Carbon Dioxide		0.30	Mol %	0.01				0.0	20	
Hydrogen Sulfide		<0.01	Mol %	0.01					20	
Methane		<0.01	Mol %	0.01					20	
Ethane		<0.01	Mol %	0.01					20	
Propane		<0.01	Mol %	0.01					20	
Isobutane		<0.01	Mol %	0.01					20	
n-Butane		<0.01	Mol %	0.01					20	
Isopentane		<0.01	Mol %	0.01					20	
n-Pentane		<0.01	Mol %	0.01					20	
Hexanes plus		<0.01	Mol %	0.01					20	
Lab ID: LCS121922 11 Laboratory Control Sample									Run: GCNGA-B_221219A 12/19/22 14:48	
Oxygen		0.58	Mol %	0.01	116	70	130			
Nitrogen		6.02	Mol %	0.01	100	70	130			
Carbon Dioxide		1.00	Mol %	0.01	101	70	130			
Methane		74.6	Mol %	0.01	100	70	130			
Ethane		6.04	Mol %	0.01	101	70	130			
Propane		5.01	Mol %	0.01	101	70	130			
Isobutane		1.99	Mol %	0.01	99	70	130			
n-Butane		1.99	Mol %	0.01	99	70	130			
Isopentane		1.01	Mol %	0.01	101	70	130			
n-Pentane		1.00	Mol %	0.01	100	70	130			
Hexanes plus		0.81	Mol %	0.01	101	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

Work Order Receipt Checklist

Hall Environmental

B22121292

Login completed by: Yvonna E. Smith

Date Received: 12/15/2022

Reviewed by: tedwards

Received by: Ilt

Reviewed Date: 12/20/2022

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	11.1°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Standard Reporting Procedures:

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

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

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

Contact and Corrective Action Comments:

None



CHAIN OF CUSTODY RECORD

PAGE: 1	OF: 1
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Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRACTOR: Energy Labs -Billings		COMPANY: Energy Laboratories		PHONE: (406) 869-6253		FAX: (406) 252-6069	
ADDRESS: 1120 South 27th Street				ACCOUNT #:		EMAIL:	
CITY, STATE, ZIP: Billings, MT 59107							
ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2212732-001B	SVE-1	TEDLAR	Air	12/12/2022 1:00:00 PM	1	Fixed Gases CO2, O2 B22121292

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: I-O	Date: 12/13/2022	Time: 9:18 AM	Received By:	Date:	Time:	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE FOR LAB USE ONLY Temp of samples _____ °C Attempt to Cool ? _____ Comments: _____
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By: Laura L. Tays	Date: 12/15/22	Time: 0920	
TAT: Standard <input checked="" type="checkbox"/> RUSH Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						



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: 2212732

RcptNo: 1

Received By: Cheyenne Cason

12/13/2022 7:50:00 AM

Completed By: Isaiah Ortiz

12/13/2022 9:14:36 AM

Reviewed By: *[Signature]* 12-13-22

[Signature]
I-04

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? Yes ☒ No ☐

(Note discrepancies on chain of custody)

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? Yes ☒ No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: *KPG 12-13-22*

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

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 175997

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID:	372171
	Action Number:	175997
	Action Type:	[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue further actions as stated in report. 2. Submit next quarterly report by May 1, 2023.	2/28/2023