



July 29, 2022

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

**Subject: 2022 Second Quarter – Solar SVE System Update
Trunk S
Harvest Four Corners, LLC
Incident Number NCS1931842879
Remediation Permit Number 3RP-1014
Rio Arriba County, New Mexico**

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Harvest Four Corners, LLC (Harvest), presents the following *2022 Second Quarter – Solar SVE System Update* report summarizing the soil vapor extraction (SVE) system performance at the Trunk S (Site), located in Unit I of Section 7, Township 25 North, Range 03 West, in Rio Arriba County, New Mexico (Figure 1).

BACKGROUND

The solar SVE system was installed in late 2019 with full time system operation beginning on July 16, 2020, to remediate subsurface impacts following a release on June 25, 2019. The release occurred at the Harvest Trunk S natural gas pipeline located in Rio Arriba County, New Mexico (Figure 1) and consisted of ≥ 25 barrels (bbls) of condensate and 278.5 MCF of natural gas sourced from a subsurface pipeline leak. Harvest reported the release to the New Mexico Oil Conservation Division (NMOCD) on a release Notification and Corrective Action Form C-141 on September 20, 2019, and the event was assigned Incident Number NCS1931842879. Approximately 2,000 cubic yards (yd³) of impacted soil were excavated and transported off site. Due to the extent of the release the excavation was unsuccessful at removing all impacted soils and the excavation was backfilled with the stockpiled soils after repairing the pipeline leak. A solar SVE system was installed to remediate impacts resulting from the release. Reports summarizing remediation system operation for the previous quarters of system operation have been submitted to the NMOCD.

SOLAR SVE SYSTEM OPERATION AND MONITORING

The solar SVE system consists of five SVE wells and a Varisolar SVE unit consisting of a 4.6 horsepower vacuum blower capable of producing 190 cubic feet per minute (cfm) at 50 inches of water column (IWC) vacuum. Each SVE well was installed with its own adjustable valve and vacuum gauge on a manifold to control flow and vacuum. Harvest utilized a solar-powered SVE system due to the remote location and the lack of electrical grid power at the site. The blower is connected to the solar panels via a motor controller that automatically starts the system as sunlight is available and throttles the blower up as sun power increases throughout the day to maximize efficiency. Seasonally, there are approximately 10 hours in the winter and 12 hours in

Ensolum, LLC | Environmental & Hydrogeologic Consultants

Durango, Colorado | info@ensolum.com

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the summer of available solar power in Farmington, New Mexico. The complete solar SVE system is constructed as one unit designed for utilization at off-grid locations and operates autonomously. The layout of the solar SVE system is depicted on Figure 2.

Between startup of the solar SVE system on July 16, 2020, and the most recent site visit on June 23, 2022, there have been 708 days of operation, with an estimated 8,306 total hours of nominal daylight available for solar SVE system operations. Since installation, the system had an actual runtime of 8,536 hours, for an overall runtime efficiency of 102.8 percent (%). Below is a table showing SVE system runtime in comparison with nominal available daylight hours per month, according to the National Oceanic and Atmospheric Administration’s National Weather Service. Photo documentation of the runtime meter in June of 2022 is included as Appendix A.

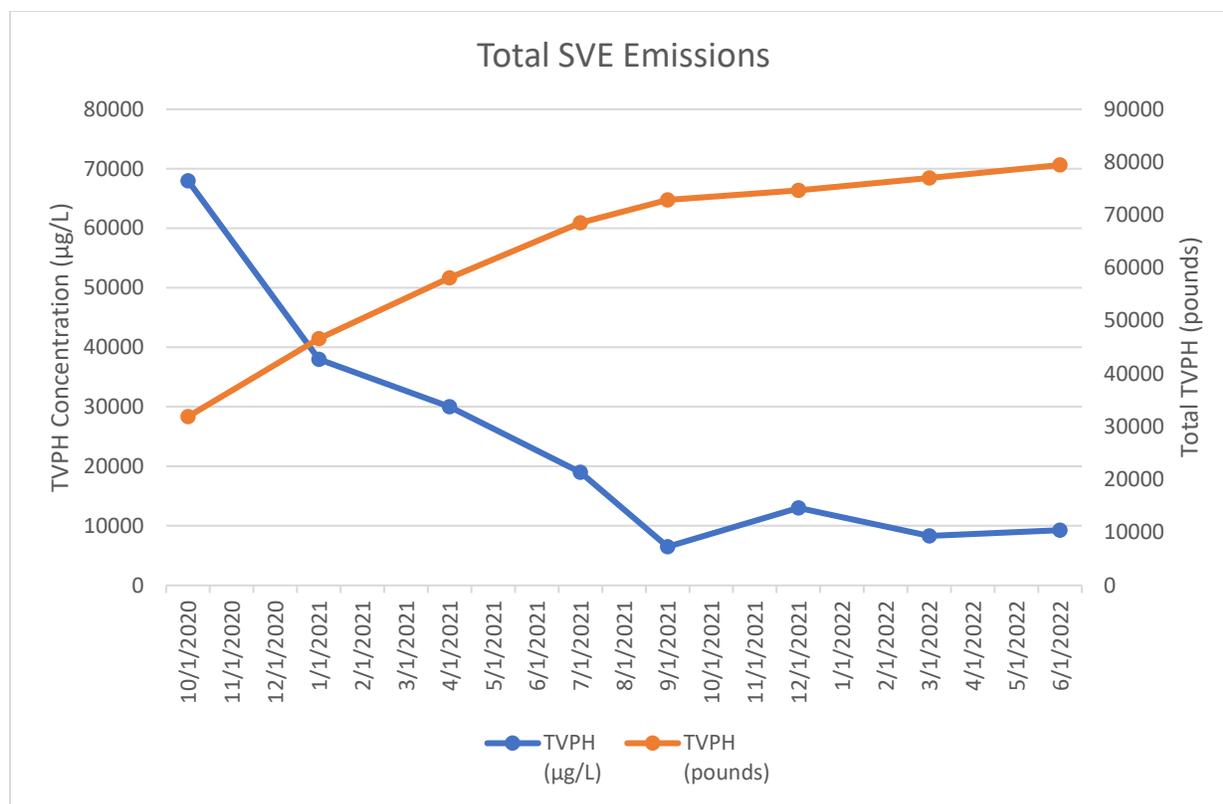
Time Period	Start up July 16, 2020 to March 23, 2022	March 24, 2022 to March 31, 2022	April 1, 2022 to April 30, 2022	May 1, 2022 to May 31, 2022	June 1, 2022, to June 23, 2022
Days	616	8	30	31	23
Avg. Nominal Daylight Hours	11.58	11	12	13	14
Available Runtime Hours	7,133	88	360	403	322
Total Available Daylight Runtime Hours					8,306
Actual Runtime Hours					8,536
Cumulative % Runtime					102.8%
Quarterly Available Daylight Runtime Hours					1,173
Quarterly Runtime Hours					1,227
Quarterly % Runtime					104.6%

AIR EMISSIONS MONITORING

An initial air sample was collected on July 16, 2020, from the influent side of the blower on the SVE system. Subsequent air samples were collected with the most recent sample collected June 23, 2022 (Table 1). Samples were collected in 1-liter Tedlar® bags via a high vacuum air sampler and submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, for analyses of volatile organic compounds (VOCs) using United States Environmental Protection Agency (EPA) Method 8260B, total volatile petroleum hydrocarbons (TVPH) using EPA Method 8015, and oxygen and carbon dioxide by Gas Processors Association Method 2261. Laboratory analytical reports are included as Appendix B.

Estimated air emissions were calculated using air sample data collected to-date (Table 2). The impacted mass source removal via the solar SVE system to-date is an estimated 79,457 pounds (lbs) of TVPH. Since system startup petroleum hydrocarbon emissions have steadily declined as shown in the chart below.

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PLAN FOR NEXT QUARTER OF OPERATION

During the upcoming third quarter 2022 operations, visits to the Site will continue monthly by Ensolum personnel to ensure 90% runtime efficiency continues and that any maintenance issues are addressed. An air sample will be collected in the third quarter and analyzed volatile organic compounds (VOCs) using United States Environmental Protection Agency (EPA) Method 8260B, TVPH using EPA Method 8015, and oxygen and carbon dioxide by Gas Processors Association Method 2261. An updated quarterly report with sample results, runtime, and mass source removal will be submitted under separate cover.

Quarterly air sampling and reporting will continue until a decline in volatile organic compounds (VOCs) is observed and indicates that hydrocarbon impacts have been reduced. At that time, Ensolum will conduct additional soil sampling to investigate potential residual impacts and request closure if concentrations of benzene, toluene, ethylbenzene, xylenes (BTEX) and TVPH are below the applicable standards defined in the New Mexico Administrative Code (NMAC) 19.15.29.12.

If the final delineation samples indicate hydrocarbon impact has been reduced to below Table 1 Closure Criteria, Ensolum will present the confirmation laboratory analysis data in a report and request closure of the release. Should the results indicate that analytes in the soil exceed Table Closure Criteria, Ensolum will continue to operate the system and make operational adjustments based on the results of the investigation.

Ensolum appreciates the opportunity to provide this report to the NMOCD. If you have any questions or comments regarding this update, do not hesitate to contact Danny Burns at (303)

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601-1420 or via email at dburns@ensolum.com or Jennifer Deal at (505) 324-5128 or at jdeal@harvestmidstream.com.

Sincerely,

ENSOLUM, LLC



Eric Carroll
Project Geologist



Danny Burns
Senior Geologist

APPENDICES

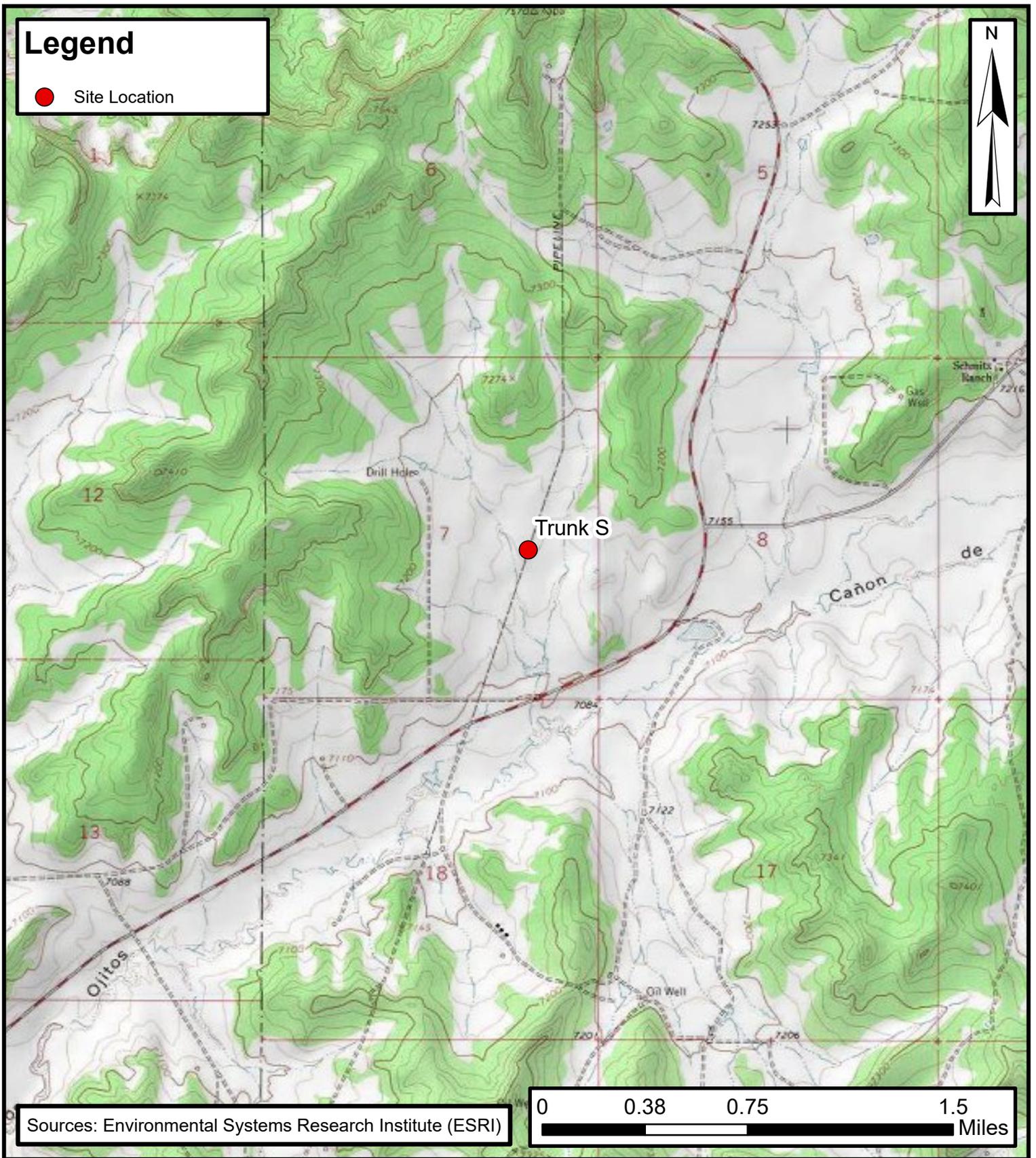
Figure 1 – Site Location Map
Figure 2 – SVE System Layout

Table 1 – Air Sample Analytical Results
Table 2 – Soil Vapor System Recovery & Emissions Summary

Appendix A – Project Photographs
Appendix B – Laboratory Analytical Reports



FIGURES

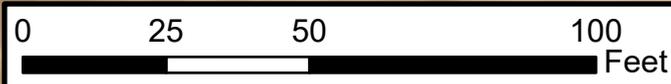
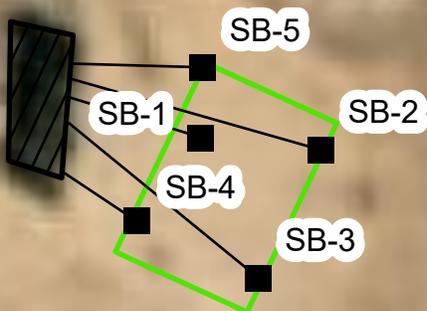


Site Location Map
 Trunk S
 36.41189°N, -107.18085°W
 Rio Arriba County, NM
 Harvest Four Corners, LLC

FIGURE
#1

Legend

- SVE Wells
- Remediation System Line
- ▨ Solar SVE Skid
- Former Excavation



Sources: Environmental Systems Research Institute (ESRI)



SVE System Layout
Trunk S
36.41189°N, -107.18085°W
Rio Arriba County, NM
Harvest Four Corners, LLC

FIGURE
#2



TABLES



TABLE 1
SOIL VAPOR EXTRACTION SYSTEM EMISSIONS ANALYTICAL RESULTS
 Harvest Midstream - Trunk S
 Rio Arriba County, New Mexico

Ensolum Project No. 07B2002001

SVE Skid 1 - Original System Analytical Results

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH/GRO (µg/L)	Oxygen (Mol %)	Carbon Dioxide (Mol %)
7/16/2020*	4,268	1,700	1,570	29.4	517.9	NA	20.2	0.671
9/3/2020*	1,100	45	220	22	230	NA	NA	NA
9/30/2020*	1,200	49	480	86	770	NA	NA	NA
10/14/2020*	1,357	150	460	15	270	68,000	20.939	0.928
1/8/2021*	786	76	310	9.1	150	38,000	20.810	0.880
4/9/2021*	898	50	160	8.2	140	30,000	21.541	0.485
7/12/2021*	859	33	150	12	210	19,000	21.465	0.491
9/29/2020*	561	15	77	5.3	85	6,500	21.567	0.536
12/14/2021*	NM	22	140	10	170	13,000	21.828	0.404
3/23/2022*	545	17	90	7.9	130	8,300	21.949	0.346
6/23/2022	605	6.5	42	3.5	49	9,300	21.39	0.45

Notes:

* - data collected by Animas Environmental

GRO: gasoline range organics

µg/L: micrograms per liter

Mol%: mole percent

NM: not measured

NA: not analyzed

PID: photoionization detector

ppm: parts per million

TVPH: total volatile petroleum hydrocarbons



TABLE 2
SOIL VAPOR EXTRACTION SYSTEM MASS REMOVAL AND EMISSIONS
 Harvest Four Corners - Trunk S
 Rio Arriba County, New Mexico
 Ensolum Project No. 07B2002001

Flow and Laboratory Analysis

Date	PID (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)
7/16/2020	4,268	1,700	1,570	29.4	517.9	NS
9/3/2020	1,100	45	220	22	230	NS
9/30/2020	1,200	49	480	86	770	NS
10/14/2020	1,357	150	460	15	270	68,000
1/8/2021	786	76	310	9.1	150	38,000
4/9/2021	898	50	160	8.2	140	30,000
7/12/2021	859	33	150	12	210	19,000
9/29/2021	561	15	77	5.3	85	6,500
12/14/2021	553	22	140	10	170	13,000
3/23/2022	545	17	90	7.9	130	8,300
6/23/2022	605	6.5	42	3.5	49	9,300
Average	1,157	197	336	19	247	24,013

Average 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)
7/16/2020	88	1,700,160	1,700,160	0.560	0.52	0.010	0.17	--
9/3/2020	86	5,007,720	3,307,560	0.281	0.29	0.008	0.12	--
9/30/2020	87	6,756,420	1,748,700	0.015	0.11	0.018	0.16	--
10/14/2020	86	7,540,740	784,320	0.032	0.15	0.016	0.17	22.00
1/8/2021	94	12,193,740	4,653,000	0.040	0.14	0.004	0.07	17.84
4/9/2021	92	17,553,660	5,359,920	0.022	0.08	0.003	0.05	11.83
7/12/2021	85	24,127,560	6,573,900	0.013	0.05	0.003	0.06	8.11
9/29/2021	92	29,730,360	5,602,800	0.008	0.04	0.003	0.05	4.22
12/14/2021	42	31,650,600	1,920,240	0.003	0.02	0.001	0.02	2.44
3/23/2022	74	36,077,280	4,426,680	0.005	0.03	0.002	0.04	2.31
6/23/2022	47.6	39,581,592	3,504,312	0.002	0.01	0.001	0.02	2.00
Average				0.10	0.14	0.01	0.09	10

Flow and Laboratory Analysis

Date	Total SVE System Hours	Delta Hours	Benzene (pounds)	Toluene (pounds)	Ethylbenzene (pounds)	Total Xylenes (pounds)	TVPH (pounds)	TVPH (tons)
7/16/2020	322	322	180	166	3	55	--	--
9/3/2020	963	641	180	185	5	77	--	--
9/30/2020	1,298	335	5	38	6	55	--	--
10/14/2020	1,450	152	5	23	2	25	31,899	15.9
1/8/2021	2,275	825	33	112	3	61	14,718	7.4
4/9/2021	3,246	971	21	79	3	48	11,483	5.7
7/12/2021	4,535	1,289	17	64	4	72	10,453	5.2
9/29/2021	5,550	1,015	8	40	3	52	4,284	2.1
12/14/2021	6,312	762	2	13	1	15	1,862	0.9
3/23/2022	7,309	997	5	32	2	41	2,303	1.2
6/23/2022	8,536	1,227	3	14	1	20	2,455	1.2
Total Mass Recovery to Date			459	765	35	521	79,457	40

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



APPENDIX A

Project Photographs

PROJECT PHOTOGRAPHS
Trunk S
Rio Arriba County, New Mexico
Harvest Midstream Company

Photograph 1

Runtime meter taken on June 13,
2022, at 15:00
Hours = 11,949





APPENDIX B

Laboratory Analytical Reports



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

July 12, 2022

Danny Burns

Harvest

1755 Arroyo Dr.

Bloomfield, NM 87413

TEL: (505) 632-4475

FAX:

RE: Trunks

OrderNo.: 2206D41

Dear Danny Burns:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/24/2022 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 light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **2206D41**

Date Reported: 7/12/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Client Sample ID: Influent 6/23/22

Project: Trunks

Collection Date: 6/23/2022 11:36:00 AM

Lab ID: 2206D41-001

Matrix: AIR

Received Date: 6/24/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	9300	250		µg/L	50	6/28/2022 8:53:04 AM	A89090
Surr: BFB	278	15-380		%Rec	50	6/28/2022 8:53:04 AM	A89090
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	6.5	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Toluene	42	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Ethylbenzene	3.5	2.5		µg/L	50	7/6/2022 1:46:16 PM	R89293
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,2,4-Trimethylbenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,3,5-Trimethylbenzene	2.4	2.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Naphthalene	ND	10		µg/L	50	7/6/2022 1:46:16 PM	R89293
1-Methylnaphthalene	ND	20		µg/L	50	7/6/2022 1:46:16 PM	R89293
2-Methylnaphthalene	ND	20		µg/L	50	7/6/2022 1:46:16 PM	R89293
Acetone	ND	50		µg/L	50	7/6/2022 1:46:16 PM	R89293
Bromobenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Bromodichloromethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Bromoform	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Bromomethane	ND	10		µg/L	50	7/6/2022 1:46:16 PM	R89293
2-Butanone	ND	50		µg/L	50	7/6/2022 1:46:16 PM	R89293
Carbon disulfide	ND	50		µg/L	50	7/6/2022 1:46:16 PM	R89293
Carbon tetrachloride	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Chlorobenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Chloroethane	ND	10		µg/L	50	7/6/2022 1:46:16 PM	R89293
Chloroform	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Chloromethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
2-Chlorotoluene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
4-Chlorotoluene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
cis-1,2-DCE	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
cis-1,3-Dichloropropene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,2-Dibromo-3-chloropropane	ND	10		µg/L	50	7/6/2022 1:46:16 PM	R89293
Dibromochloromethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Dibromomethane	ND	10		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,2-Dichlorobenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,3-Dichlorobenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,4-Dichlorobenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Dichlorodifluoromethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,1-Dichloroethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,1-Dichloroethene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order **2206D41**

Date Reported: 7/12/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Client Sample ID: Influent 6/23/22

Project: Trunks

Collection Date: 6/23/2022 11:36:00 AM

Lab ID: 2206D41-001

Matrix: AIR

Received Date: 6/24/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,2-Dichloropropane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,3-Dichloropropane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
2,2-Dichloropropane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,1-Dichloropropene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Hexachlorobutadiene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
2-Hexanone	ND	50		µg/L	50	7/6/2022 1:46:16 PM	R89293
Isopropylbenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
4-Isopropyltoluene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
4-Methyl-2-pentanone	ND	50		µg/L	50	7/6/2022 1:46:16 PM	R89293
Methylene chloride	ND	15		µg/L	50	7/6/2022 1:46:16 PM	R89293
n-Butylbenzene	ND	15		µg/L	50	7/6/2022 1:46:16 PM	R89293
n-Propylbenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
sec-Butylbenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Styrene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
tert-Butylbenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Tetrachloroethene (PCE)	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
trans-1,2-DCE	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
trans-1,3-Dichloropropene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,2,3-Trichlorobenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,2,4-Trichlorobenzene	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,1,1-Trichloroethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,1,2-Trichloroethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Trichloroethene (TCE)	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Trichlorofluoromethane	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
1,2,3-Trichloropropane	ND	10		µg/L	50	7/6/2022 1:46:16 PM	R89293
Vinyl chloride	ND	5.0		µg/L	50	7/6/2022 1:46:16 PM	R89293
Xylenes, Total	49	7.5		µg/L	50	7/6/2022 1:46:16 PM	R89293
Surr: Dibromofluoromethane	102	70-130		%Rec	50	7/6/2022 1:46:16 PM	R89293
Surr: 1,2-Dichloroethane-d4	99.1	70-130		%Rec	50	7/6/2022 1:46:16 PM	R89293
Surr: Toluene-d8	100	70-130		%Rec	50	7/6/2022 1:46:16 PM	R89293
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	50	7/6/2022 1:46:16 PM	R89293

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		



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ANALYTICAL SUMMARY REPORT

June 30, 2022

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

Work Order: G22060452

Project Name: 2206D41

Energy Laboratories Inc. Gillette WY received the following 1 sample for Hall Environmental on 6/27/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
G22060452-001	2206D41-001B; Influent 6/23/22	06/23/22 11:36	06/27/22	Gas	Air Correction Calculations Analysis Corrections 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., 400 W. Boxelder Rd., Gillette, WY 82718, 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 tests results, please contact your Project Manager.

Report Approved By:



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CLIENT: Hall Environmental
Project: 2206D41
Work Order: G22060452

Report Date: 06/30/22

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.



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LABORATORY ANALYTICAL REPORT

Prepared by Gillette, WY Branch

Client: Hall Environmental
Project: 2206D41
Client Sample ID: 2206D41-001B; Influent 6/23/22
Location:
Lab ID: G22060452-001

Report Date: 06/30/22
Collection Date: 06/23/22 11:36
Date Received: 06/27/22
Sampled By: Not Provided

Analyses	Result	Units	Qualifier	Method	Analysis Date / By
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GAS CHROMATOGRAPHIC ANALYSIS REPORT

Oxygen	21.39	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Nitrogen	77.96	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Carbon Dioxide	0.45	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Hydrogen Sulfide	<0.01	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Methane	<0.01	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Ethane	<0.01	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Propane	<0.01	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Isobutane	<0.01	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
n-Butane	<0.01	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Isopentane	<0.01	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
n-Pentane	<0.01	Mol %		GPA 2261-	06/29/22 09:55 / eli-b
Hexanes plus	0.21	Mol %		GPA 2261-	06/29/22 09:55 / eli-b

GPM @ STD COND/1000 CU.FT., MOISTURE FREE GAS

Propane	< 0.001	gpm		GPA 2261-	06/29/22 09:55 / eli-b
Isobutane	< 0.001	gpm		GPA 2261-	06/29/22 09:55 / eli-b
n-Butane	< 0.001	gpm		GPA 2261-	06/29/22 09:55 / eli-b
Isopentane	< 0.001	gpm		GPA 2261-	06/29/22 09:55 / eli-b
n-Pentane	< 0.001	gpm		GPA 2261-	06/29/22 09:55 / eli-b
Hexanes plus	0.088	gpm		GPA 2261-	06/29/22 09:55 / eli-b
GPM Total	0.088	gpm		GPA 2261-	06/29/22 09:55 / eli-b
GPM Pentanes plus	0.088	gpm		GPA 2261-	06/29/22 09:55 / eli-b

CALCULATED PROPERTIES

Gross BTU per cu ft @ Std Cond. (HHV)	10			GPA 2261-	06/29/22 09:55 / eli-b
Net BTU per cu ft @ std cond. (LHV)	9			GPA 2261-	06/29/22 09:55 / eli-b
Pseudo-critical Pressure, psia	546			GPA 2261-	06/29/22 09:55 / eli-b
Pseudo-critical Temperature, deg R	241			GPA 2261-	06/29/22 09:55 / eli-b

PHYSICAL PROPERTIES-CALCULATED

Specific Gravity @ 60/60F	1.00			D3588-81	06/29/22 09:55 / eli-b
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COMMENTS

- 06/29/22 09:55 / eli-b

- 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)



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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Work Order: G22060452

Report Date: 06/30/22

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: GPA 2261-95							Batch: R383909		
Lab ID: G22060452-001ADUP	Sample Duplicate			Run: GCNGA-B_220629A			06/29/22 10:29		
Oxygen	21.4	Mol %	0.01				0	20	
Nitrogen	78.0	Mol %	0.01				0	20	
Carbon Dioxide	0.45	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	0.22	Mol %	0.01				4.7	20	
Lab ID: LCS062922							06/29/22 11:29		
Laboratory Control Sample			Run: GCNGA-B_220629A						
Oxygen	0.58	Mol %	0.01	116	70	130			
Nitrogen	5.93	Mol %	0.01	99	70	130			
Carbon Dioxide	1.00	Mol %	0.01	101	70	130			
Methane	74.6	Mol %	0.01	100	70	130			
Ethane	6.05	Mol %	0.01	101	70	130			
Propane	5.04	Mol %	0.01	102	70	130			
Isobutane	2.00	Mol %	0.01	100	70	130			
n-Butane	2.00	Mol %	0.01	100	70	130			
Isopentane	1.01	Mol %	0.01	101	70	130			
n-Pentane	1.01	Mol %	0.01	101	70	130			
Hexanes plus	0.80	Mol %	0.01	100	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

G22060452

Login completed by: Jill S. Jeffress

Date Received: 6/27/2022

Reviewed by: Chantel S. Johnson

Received by: csj

Reviewed Date: 6/29/2022

Carrier name: FedEx

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 checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input 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 type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>
Container/Temp Blank temperature:	°C		
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

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-Gillette		COMPANY: Energy Laboratories	PHONE: (866) 686-7175	FAX:
ADDRESS: 400 W Boxelder Rd			ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Gillette, WY 82718				
ITEM: SAMPLE	CLIENT SAMPLE ID: Influent 6/23/22	BOTTLE TYPE: TEDLAR	MATRIX: Air	COLLECTION DATE: 6/23/2022 11:36:00 AM
1				# CONTAINERS: 1
ANALYTICAL COMMENTS 1 Natural Gas Analysis				

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.

6220604184

Relinquished By: <i>me</i>	Date: 6/24/2022	Time: 8:10 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
TAT: Standard <input type="checkbox"/>	RUSH <input checked="" type="checkbox"/>	Next BD <input type="checkbox"/>	2nd BD <input type="checkbox"/>	3rd BD <input type="checkbox"/>	
REPORT TRANSMITTAL DESIRED:			FOR LAB USE ONLY		
<input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE			Temp of samples _____ °C Attempt to Cool? _____		
Comments:					



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: Harvest Work Order Number: 2206D41 RcptNo: 1

Received By: Cheyenne Cason 6/24/2022 7:00:00 AM
Completed By: Cheyenne Cason 6/24/2022 8:04:09 AM
Reviewed By: See 6/24/22

Chain of Custody

- 1. Is Chain of Custody complete? Yes [checked] No [] Not Present []
2. How was the sample delivered? Courier

Log In

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

of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: KPA 6-23-22
6-24-22

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [] No [] NA [checked]

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

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, NA, Good, Yes, , ,

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 129947

CONDITIONS

Operator: Harvest Four Corners, LLC 1111 Travis Street Houston, TX 77002	OGRID: 373888
	Action Number: 129947
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue with report's Plan for Next Quarter of Operation. 2. Submit next quarterly report by October 31, 2022.	10/18/2022