

VIA ELECTRONIC MAIL

April 14, 2022

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

Subject: 2022 First Quarter - Solar SVE System Update

Trunk L Tank Battery Harvest Four Corners, LLC Incident Number NVF1900731813 Remediation Permit Number 3RP-13665

Rio Arriba County, New Mexico

To Whom It May Concern:

WSP USA Inc. (WSP), on behalf of Harvest Four Corners, LLC (Harvest), presents the following 2022 First Quarter - Solar SVE System Update report summarizing the solar soil vapor extraction (SVE) system performance at the Trunk L Tank Battery (Site), located in Unit A of Section 28, Township 28 North, Range 05 West, in Rio Arriba County, New Mexico (Figure 1).

BACKGROUND

The solar SVE system was installed on September 18, 2019, to remediate subsurface soil impacts following a release on December 14, 2018. Excessive liquids were released onto the Site during a pigging event. Additionally, the volume of fluid in the slug catcher was elevated due to a stuck float valve, causing a release of approximately 22 barrels (bbls) into the lined secondary containment. Harvest reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on December 28, 2018, and the event was assigned Incident Number NVF1900731813. 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 three deep SVE wells, three shallow SVE wells, and a 2.75 horsepower, three-phase blower capable of producing 105 cubic feet per minute (cfm) at 50 inches of water column (IWC) vacuum, with a maximum vacuum capability of 84 IWC. Each SVE well was installed with its own adjustable valve and vacuum gauge on a manifold to control flow and vacuum. WSP utilized a solar-powered SVE system due to the remote location and the lack of electrical grid power at the Site. The blower is powered by 10 solar panels with a nominal maximum power output of 3,050 watts. The blower is connected to the solar panels via a motor controller that automatically starts the system as soon 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 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 September 18, 2019, and the most recent site visit on March 31, 2022, there have been 742 days of operation, with an estimated 7,791 total hours of nominal daylight available for solar SVE system operation. Since installation, the system had an actual runtime of 10,932 hours, for an overall runtime

WSP USA 848 EAST 2ND AVENUE DURANGO CO 81301

Tel.: 970-385-1096



efficiency of 110.7 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.

Time Period	Start up on September 18, 2019 to December 27, 2021	December 27, 2021 to December 31, 2021	January 1, 2022 to January 31, 2022	February 1, 2022 to February 28, 2022	March 1, 2022, to March 31, 2022
Days	742	4	31	28	31
Avg. Nominal Daylight Hours	12	9	10	10	11
Available Runtime Hours	8,904	36	310	280	341

Total Available Daylight Runtime Hours 9,871

Actual Runtime Hours 10,932 Cumulative % Runtime 110.7%

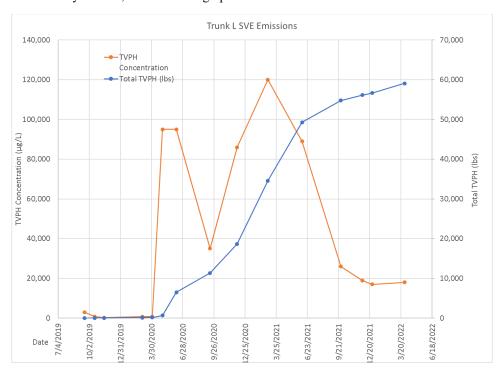
Cumulative % Runtime 119
Quarterly Available Daylight Runtime Hours

erly Available Daylight Runtime Hours 967
Quarterly Runtime Hours 1,004
Quarterly % Runtime 103.8%

AIR EMISSIONS MONITORING

An initial air sample was collected on September 18, 2019, from the influent side of the blower on the solar SVE system. Subsequent air samples were collected with the most recent sample collected March 31, 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 benzene, toluene, ethylbenzene, and total xylenes (BTEX) using United States Environmental Protection Agency (EPA) Method 8021 and total volatile petroleum hydrocarbons (TVPH) using EPA Method 8015.

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 59,087 pounds (lbs) of TVPH. An estimated 9,530 gallons (227 bbls) of air equivalent condensate has been recovered to-date. An increase in TVPH analytical results was observed due to system optimization in May 2020, through focusing system operation on the four SVE wells with the highest photoionization detector measurements. After the reconfiguration in May 2020, there was a peak emission concentration in March 2021 of 120,000 micrograms per liter (μg/L). Since May 2020, the emissions concentrations have continued to steadily decline, as seen in the graph below.





PLAN FOR NEXT QUARTER OF OPERATION

During the upcoming second quarter 2022 operations, visits to the Site will continue monthly by WSP personnel to ensure 90% runtime efficiency continues and that any maintenance issues are addressed. An air sample will be collected in the second quarter and analyzed for BTEX by EPA Method 8021 and TVPH by EPA Method 8015. 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, WSP will conduct additional soil sampling to investigate potential residual impacts and request closure if concentrations of BTEX and TPH are below the applicable standards as detailed in the approved *Remediation Work Plan* dated May 28, 2019.

If the final delineation samples indicate hydrocarbon impact has been reduced to below Table 1 Closure Criteria, WSP 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 1 Closure Criteria, WSP will continue to operate the system and make operational adjustments based on results of the investigation.

WSP 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 (970) 385-1096 or via email at danny.burns@wsp.com or Jennifer Deal at (505) 324-5128 or at jdeal@harvestmidstream.com.

Kind regards,

Danny Burns

Consultant, Geologist

Robert Rebel, P.E.

Environmental Engineer, Technical Principal

Probert T. Rebel

cc: Jennifer Deal, Harvest Four Corners

Encl.

Figure 1 - Site Location Map

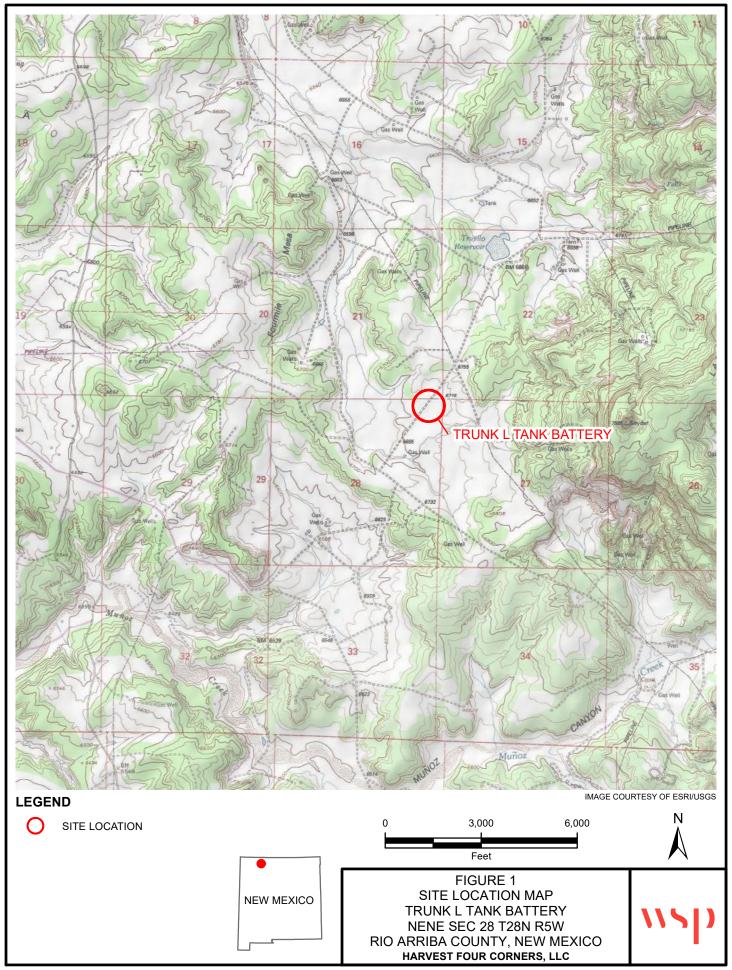
Figure 2 – SVE System Layout

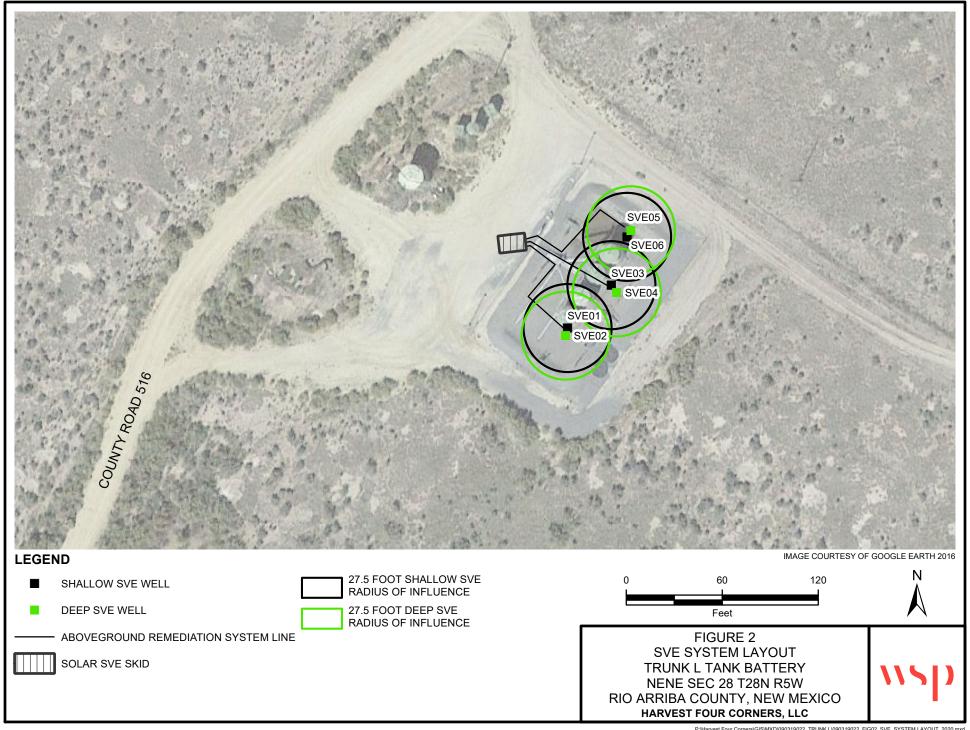
Table 1 – Air Sample Analytical Results

Table 2 – Soil Vapor System Recovery & Emissions Summary

Enclosure A – Laboratory Analytical Report

FIGURES





TABLES

TABLE 1

AIR SAMPLE ANALYTICAL RESULTS TRUNK L TANK BATTERY RIO ARRIBA COUNTY, NEW MEXICO

Sample ID	Sample Date	Vapor PID (ppm)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μg/L)	TVPH (μg/L)
Influent 9/18	9/18/2019	946	1,000	1,500	50	550	NA
Influent 10/18	10/18/2019	931	250	410	6.5	74	NA
Influent 11/14	11/14/2019	578	1.8	4.3	0.19	1.7	250
Influent 3/3/20	3/3/2020	868	3.9	22	1.3	13	760
Influent 5/1/20	5/1/2020	913	610	1,500	58	570	95,000
Influent 6/10/20	6/10/2020	1,527	640	1,600	56	530	95,000
Influent 9/15	9/15/2020	1,077	180	840	24	230	35,000
Influent 12/2/20	12/2/2020	1,320	380	1,100	23	270	86,000
Influent 3/1/21	3/1/2021	1,469	440	2,100	110	1,100	120,000
Influent 6/8/21	6/8/2021	1,380	300	1,200	42	380	89,000
Influent 9/28/21	9/28/2021	916	150	230	<10	49	26,000
Influent 11/29/2021	11/29/2021	573	78	280	9.1	84	19,000
Influent - 20211227	12/27/2021		120	240	< 5.0	47	17,000
Influent 3/31	3/31/2022	406	76	210	5.5	47	18,000

NOTES:

 $\mu g/L$ - micrograms per liter

NA - not analyzed

PID - photoionization detector

PPM - parts per million

TVPH- total volume petroleum hydrocarbons

Italics denote that the laboratory method detection limit was used for calculations for a non-detected result

SOIL VAPOR EXTRACTION SYSTEM RECOVERY & EMISSIONS SUMMARY
TRUNK L TANK BATTERY
RIO ARRIBA COUNTY, NEW MEXICO

TABLE 2

			Sample Info	rmation and I	ab Analysis			
Date	Total Flow (cf)	Delta Flow (cf)	PID (ppm)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	TVPH (µg/L)
9/18/2019*	3,033	3,033	1,435	1,000	1,500	50	550	3,013
10/18/2019*	723,303	720,270	931	250	410	6.5	74	744
11/14/2019	1,334,343	611,040	578	1.8	4.3	0.19	1.7	250
3/3/2020	2,898,866	1,564,523	868	3.9	22	1.3	13	760
4/1/2020**	3,795,613	896,747	838	3.7	21	1.2	12	733
5/1/2020	3,882,637	87,024	913	610	1,500	58	570	95,000
6/10/2020	4,869,885	987,248	1,527	640	1,600	56	530	95,000
9/15/2020	7,089,263	2,219,378	1,077	180	840	24	230	35,000
12/2/2020	8,447,393	1,358,130	1,320	380	1,100	23	270	86,000
3/1/2021	10,571,393	2,124,000	1,469	440	2,100	110	1,100	120,000
6/8/2021	13,226,681	2,655,288	1,380	300	1,200	42	380	89,000
9/28/2021	16,596,641	3,369,960	916	150	230	10	49	26,000
11/29/2021	17,746,416	1,149,775	573	78	280	9.1	84	19,000
12/27/2021	18,233,905	487,489		120	240	5.0	47	17,000
3/31/2022	20,402,545	2,168,640	406	76	210	5.5	47	18,000
	Average		1,017	282	750	27	264	40,367

	Vapor Extraction Calculations									
Date	Flow Rate (cfm)	Benzene (lb/hr)	Toluene (lb/hr)	Ethyl- benzene (lb/hr)	Total Xylenes (lb/hr)	TVPH (lb/hr)				
9/18/2019	33.7	0.1262	0.1892	0.0063	0.0694	0.380				
10/18/2019	37.8	0.0353	0.0579	0.0009	0.0105	0.105				
11/14/2019	38.0	0.0003	0.0006	0.0000	0.0002	0.036				
3/3/2020	21.3	0.0003	0.0018	0.0001	0.0010	0.060				
4/1/2020	21.3	0.0003	0.0017	0.0001	0.0010	0.058				
5/1/2020	39.2	0.0895	0.2201	0.0085	0.0836	13.940				
6/10/2020	29.3	0.0703	0.1757	0.0061	0.0582	10.430				
9/15/2020	27.8	0.0187	0.0873	0.0025	0.0239	3.638				
12/2/2020	26.6	0.0379	0.1097	0.0023	0.0269	8.573				
3/1/2021	40.0	0.0659	0.3144	0.0165	0.1647	17.968				
6/8/2021	34.2	0.0384	0.1536	0.0054	0.0486	11.394				
9/28/2021	37.0	0.0208	0.0319	0.0014	0.0068	3.601				
11/29/2021	28.7	0.0084	0.0301	0.0010	0.0090	2.043				
12/27/2021	30.4	0.0137	0.0273	0.0006	0.0054	1.936				
3/31/2022	36.0	0.0102	0.0283	0.0007	0.0063	2.426				
Average	32.1	0.04	0.10	0.00	0.03	5.11				

TABLE 2

SOIL VAPOR EXTRACTION SYSTEM RECOVERY & EMISSIONS SUMMARY TRUNK L TANK BATTERY RIO ARRIBA COUNTY, NEW MEXICO

		P	ounds Extract	ed Over Total	Operating Tin	ne		
Date	Total Operational Hours	Delta Hours	Benzene (lbs)	Toluene (lbs)	Ethyl- benzene (lbs)	Total Xylenes (lbs)	Total BTEX (lbs)	TVPH (lbs)
9/18/2019	1.5	1.5	0.2	0.3	0.0	0.1	0.6	0.6
10/18/2019	319.5	318	11.2	18.4	0.3	3.3	33.3	33.4
11/14/2019	587.5	268	0.1	0.2	0.0	0.1	0.3	9.5
3/3/2020	1,814	1,226.5	0.4	2.1	0.1	1.3	3.9	74.2
4/1/2020	2,517	703	0.2	1.2	0.1	0.7	2.1	41.0
5/1/2020	2,554	37	3.3	8.1	0.3	3.1	14.9	515.8
6/10/2020	3,115	561	39.4	98.6	3.4	32.6	174.1	5,851
9/15/2020	4,447	1,332	24.9	116.3	3.3	31.8	176.4	4,846
12/2/2020	5,297	850	32.2	93.2	1.9	22.9	150.2	7,287
3/1/2021	6,182	885	58.3	278.3	14.6	145.8	496.9	15,902
6/8/2021	7,476	1,294	49.7	198.8	7.0	63.0	318.4	14,744
9/28/2021	8,994	1,518	31.5	48.4	2.1	10.3	92.3	5,467
11/29/2021	9,661	667	5.6	20.1	0.7	6.0	32.4	1,363
12/27/2021	9,928	267	3.6	7.3	0.2	1.4	12.5	517
3/31/2022	10,932	1,004	10.3	28.4	0.7	6.4	45.8	2,435
Tota	l Extracted to	Date	271.0	919.6	34.7	328.7	1,554.1	59,087

NOTES:

* - TVPH data extrapolated from PID values

** - Analytical data extrapolated from PID values

BTEX - benzene, toluene, ethylbenzene, total xylenes

cf - cubic feet

cfm - cubic feet per minute

lbs - pounds

lb/hr - pounds per hour

μg/L - microgram per liter

PID - photoionization detector

ppm - parts per million

TVPH - total volatile petroleum hydrocarbons

Italics denote that the laboratory method detection limit was used for calculations for a non-detected result

ENCLOSURE A – LABORATORY ANALYTICAL REPORT



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

April 07, 2022

Danny Burns

Harvest

1755 Arroyo Dr.

Bloomfield, NM 87413 TEL: (505) 632-4475

FAX:

RE: Trunk L OrderNo.: 2204072

Dear Danny Burns:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/2/2022 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

and st

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **2204072**Date Reported: **4/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest Client Sample ID: Influent 3/31

 Project:
 Trunk L
 Collection Date: 3/31/2022 4:00:00 PM

 Lab ID:
 2204072-001
 Matrix: AIR
 Received Date: 4/2/2022 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	18000	250	μg/L	50	4/4/2022 12:45:09 PM	G86971
Surr: BFB	120	15-380	%Rec	50	4/4/2022 12:45:09 PM	G86971
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	76	5.0	μg/L	50	4/4/2022 12:45:09 PM	B86971
Toluene	210	5.0	μg/L	50	4/4/2022 12:45:09 PM	B86971
Ethylbenzene	5.5	5.0	μg/L	50	4/4/2022 12:45:09 PM	B86971
Xylenes, Total	47	10	μg/L	50	4/4/2022 12:45:09 PM	B86971
Surr: 4-Bromofluorobenzene	99.9	70-130	%Rec	50	4/4/2022 12:45:09 PM	B86971

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 Quanitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
 - E Estimated value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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

Sample Log-In Check List

Client Name: Harvest	Work Order Nun	nber: 2204072		RcptNo: 1	
Received By: Tracy Casarrubias	4/2/2022 8:00:00 A	ΔM			
Completed By: Sean Livingston	4/4/2022 9:03:57 A	AM	Silv	,	
Reviewed By: 4-4-ZZ			J C/7) of	
Chain of Custody					
1. Is Chain of Custody complete?		Yes 🗸	No 🗌	Not Present	
2. How was the sample delivered?		Courier			
<u>Log In</u>					
Was an attempt made to cool the sample	s?	Yes	No 🗌	NA 🔽	
4. Were all samples received at a temperatu	are 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 tes		Yes 🗸	No 🗌		
 Are samples (except VOA and ONG) prop 	erly preserved?	Yes 🗸	No 🗌		
8. Was preservative added to bottles?		Yes	No 🗸	NA 🗆	
9. Received at least 1 vial with headspace <		Yes	No 🗌	NA 🗹	
Were any sample containers received bro	ken?	Yes		# of preserved	
Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🗸		bottles checked for pH: (<2 or >12 ur	nless noted)
2. Are matrices correctly identified on Chain of	of Custody?	Yes 🗸	No 🗌	Adjusted?	
3. Is it clear what analyses were requested?		Yes 🗸	No 🗌		F
4. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 🗸	No 🗆	Checked by: Yn 4	/4/22
pecial Handling (if applicable)					
5. Was client notified of all discrepancies wit	h this order?	Yes	No 🗌	NA 🗹	
Person Notified:	Date:		Management of State Stat		
By Whom:	Via:	eMail P	hone 🗌 Fax 🏻	In Person	
Regarding:		4.9 MORE USERNA AND CONTRACTOR OF THE PROPERTY AND ADMINISTRATION ADMINISTRATION ADMINISTRATION AND ADMINISTRATION AND ADMINIST	AND THE AND THE PERSON NAMED IN COLUMN	A STATE OF THE PARTY OF T	
Client Instructions:				Medical control and desired and analysis of the sales."	
6. Additional remarks:					
7. Cooler Information Cooler No Temp °C Condition	Seal Intact Seal No	Seal Data	Signed Dec		
1 NA Good	Ocal Ilitadi. Seal NO	Seal Date	Signed By		

16		
Chain-of-Custody Record	Turn-Around Time:	
e Client: Harrese Four corners	☐ Standard ☐ Rush ☐ Rush	ANALYSIS LABORATOR
Monica Smith	Project Name:	m
Mailing Address:	Trank L	4901 Hawkins NE - Albuquerque, NM 87109
	Project #:	O1
Phone #:		Anal
email or Fax#: MSMITH @ harrest midstream Com	Project Manager:	O)
QA/QC Package:		MRCB's
☐ Standard ☐ Level 4 (Full Validation)	Denny banns	PC OSIM
Accreditation: ☐ Az Compliance	Sampler: Exic caveal	/ DR 082 .1) 827 NO ₂ ,
□ NELAC □ Other	On Ice: ☐ Yes ☐/No	RO es/8 504 or s s
□ EDD (Type)	# of Coolers: 1	(GF cide 310 stals NO ₃
	Cooler Temp(including cF): $\bigwedge \bigwedge $ (°C)	estic lethony 83 8 Me Br, N
	Preservative	PH:80 081 P DB (N AHS b CRA J, F, E 260 (\ 270 (S
Wattix Calliple Nation	Type and # Type CCONO #C	8 E P R C 8:
3/31 16:00 Air Influent 3/31	178/ica 001	× ×
		19
23 P.		
::20:		
22 4		
/18/26		
Date: Time: Relinquished by:	Date Time	Remarks:
8/1/ 13:15 C CCC	(Was Wes 4/122 1318	esic carroll & wsp. com
ate: Time: Relinquished by:	Received by: Via: Come Date Time	
1/21/865 (JMW Was		
	intracted to other accredited laboratories. This serves as notice of this	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.



HALL ENVIRONMENTAL

Released to Imaging: 9/21/2022 12:35:10 PM

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

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 99545

CONDITIONS

Operator:	OGRID:
Harvest Four Corners, LLC	373888
1111 Travis Street	Action Number:
Houston, TX 77002	99545
	Action Type:
	[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created	Condition	Condition
Ву		Date
nvelez	Accepted for the record. See App ID 129946 for most updated status.	9/21/2022