L Peter Galusky, Jr PE

5935 Exeter Cir Norcross, GA 30071 | 470 955-5335 | peter@bluerock.pro

April 1, 2022

Bradford Billings

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87504

Re: 2021 Annual Report Rice Operating Company – Vacuum SWD System Vacuum F-33 Boot (1R425-37): UL/F, Sec. 33, T17S, R35E

Review of the 2021 Annual Report for Vacuum F-33 Boot: Content Satisfactory

 Continue to monitor and sample groundwater quarterly for 2023.
Continue recovery for chlorinated impacted groundwater.
Submit Annual Report for 2023 no later than April 1, 2024.

Sent via E-mail

Mr. Billings:

This letter summarizes progress made over the past calendar year pursuant to remedial actions approved for this site in 2015, which is operated by Rice Operating Company (ROC). The site is located approximately 2.5 miles east of Buckeye, New Mexico at UL/F, Sec. 33, T17S, R35E as shown on the Geographic Location Map (Figure 1). The depth to the water table averaged approximately 84 ft bgs during 2021.

Background and Previous Work

In 2007, ROC initiated work on the former Vacuum F-33 boot junction box and a junction box disclosure report was submitted to NMOCD. An NMOCD approved Investigation and Characterization Plan (ICP) was implemented in 2009 to delineate residual soil chlorides and hydrocarbons and to evaluate groundwater quality beneath the site. The results of this work were reported to NMOCD in July 2013, along with a Corrective Action Plan (CAP), which proposed the installation of a 20-mil reinforced synthetic liner and an up-gradient groundwater monitor well. The CAP was approved by NMOCD on August 14th, 2013.

ROC completed the installation of the liner and restored the ground surface as specified in the CAP in early 2014. The results of this work were summarized and reported to NMOCD as an "Initial CAP Report and Soil Closure Request" on February 10th, 2014 and this was approved on March 28th, 2014. Following continued groundwater monitoring through 2014, ROC submitted a summary report "Proposed Groundwater Recovery and Project Update" to NMOCD which proposed limited groundwater removal from the near-source monitor well (MW-1) to reduce groundwater chloride mass. NMOCD approved this work on April 2nd, 2015. ROC subsequently began groundwater recovery in May 2015.

Rice Operating Company Vacuum F-33 Boot Annual Report

Groundwater Chlorides & BTEX

Results of groundwater sampling from March 2009 through December 2021 are given in the Appendix Figure 3, Table 1 (annual averages) and Table 2 (full dataset). Groundwater chloride concentrations in the down-gradient monitor well (MW-1) have varied widely since sampling began in 2009. Groundwater chloride concentrations averaged 563 mg/l over measurements taken in 2021, down slightly from the 2020 average of 580 mg/l. Groundwater chloride concentrations in the up-gradient monitor well (MW-2) averaged 55 mg/l in 2021, essentially unchanged since 2020 when it averaged 64 mg/l. NMOCD granted approval to cease BTEX sampling in 2020 since these had not been detected in groundwater samples from the beginning of sampling in 2009 through the first quarter of 2020.

A total of approximately 10,821 bbls of chloride impacted groundwater were pumped from the near-source monitor well (MW-1) from 2015 through 2021, resulting in the removal of an estimated 1,361 kg of chlorides. The removed groundwater was hauled to an off-site location and utilized for beneficial use.

On January 25th, 2022, NMOCD granted approval to cease sampling of MW-2. ROC will continue to grab samples, as needed, to ensure there are no non-ROC, up-gradient sources contributing to the degradation of groundwater quality. ROC will also continue groundwater recovery and quarterly monitoring well sampling in 2022.

ROC is the service provider (agent) for the Vacuum SWD System and has no ownership of any portion of the pipeline, well, or facility. The system is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis. The Vacuum system is now abandoned. We thus submit this report for your review and consideration. Please call Rice Operating Company or me if you have any questions or need additional information.

Sincerely,

L. Peter Galusky, Jr. P.E. NM Prof. Engineer No. 22561

Copy: Rice Operating Company Attachments: ... as noted, above.

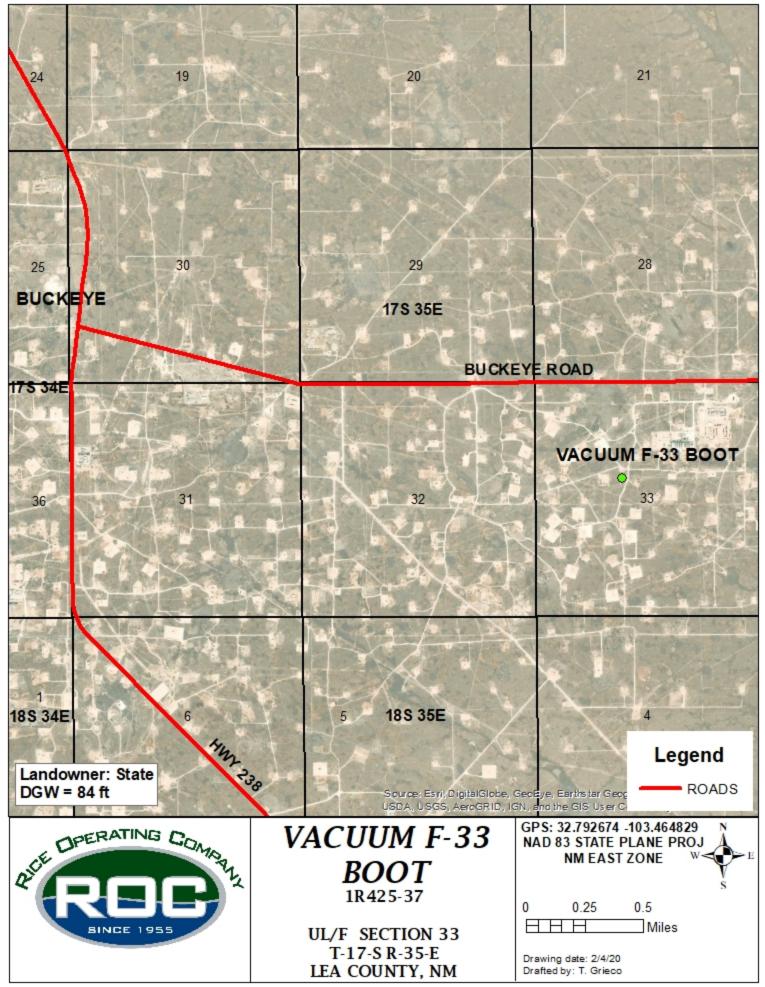


L Peter Galusky, Jr PE

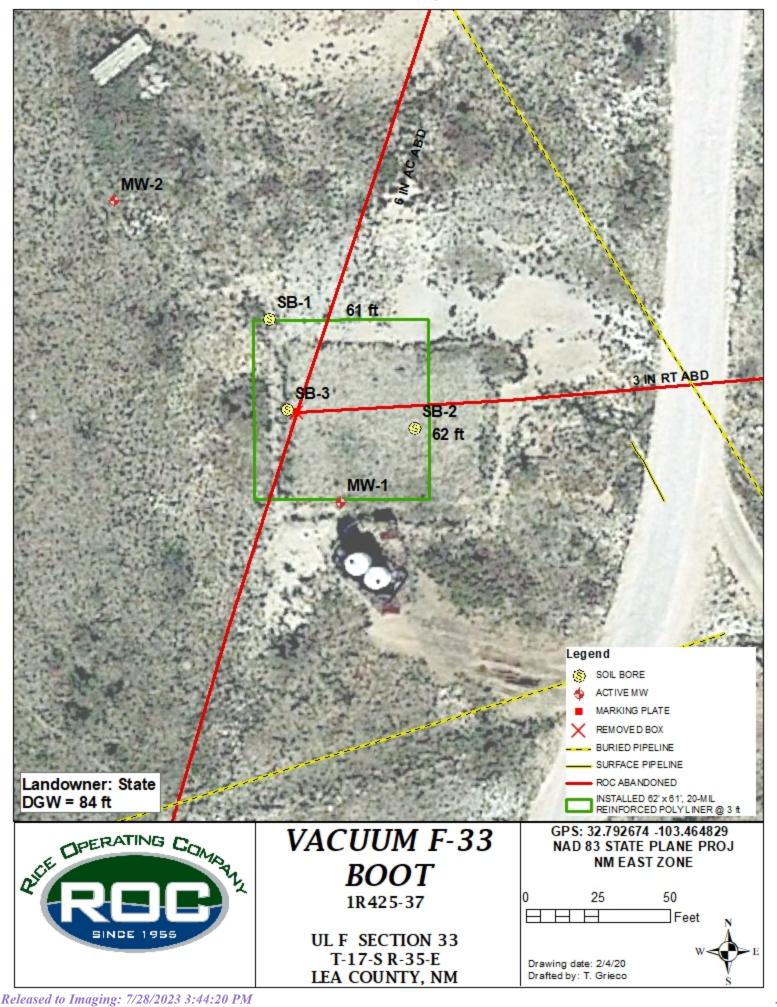
Received by OCD: 3/15/2022 3:11:03 PM

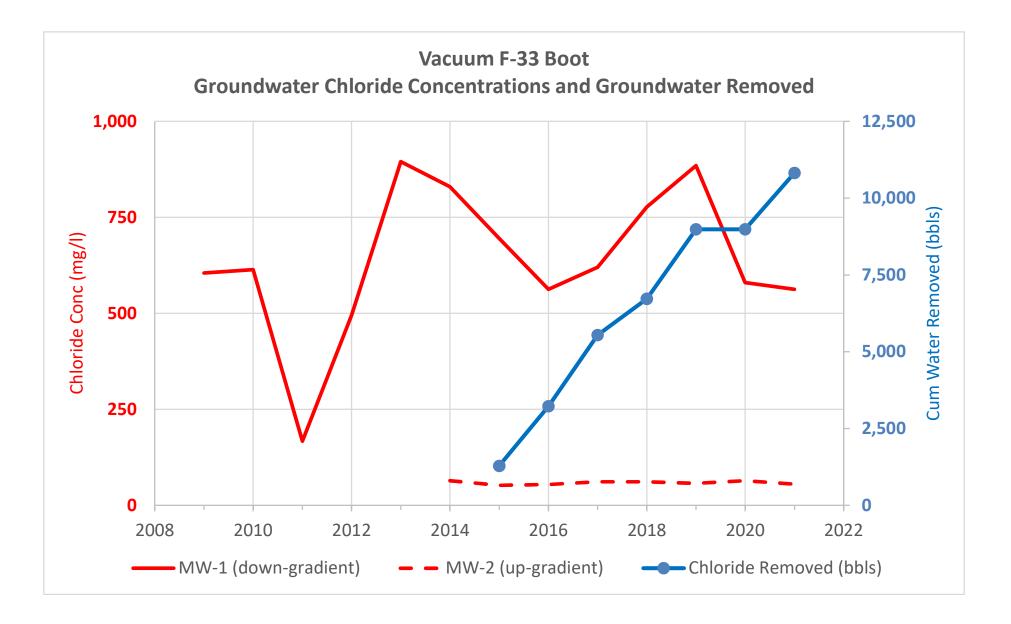
Geographic Location

Figure of 28



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Rice Operating Company Vacuum F-33 Boot Groundwater Chlorides - Annual Average Concentrations (mg/l)

				Groundwate	er		
	MW-1	MW-2		Removed		Chloride Ren	noved
Year	(down-gradient)	(up-gradient)		(bbls)		(bbls)	
2009	605						
2010	614						
2011	167						
2012	495						
2013	895						
2014	830		64				
2015	695		52		1,285		113
2016	563		54		3,225		299
2017	620		61		5,545		666
2018	778		61		6,725		884
2019	885		57		8,985		1,172
2020	580		64		8,985		1,172
2021	563		55	-	10,821		1,361

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ROC - Vacuum F-33 boot (1R425-37)

Groundwater Sampling - Full Dataset

MW	Depth to Water	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)		Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
1	80.6	126.5	29.8	300.0	3/2/2009	432	1,070	<0.001	<0.001	<0.001	<0.003	56.0	Clear No Odor
1	80.7	126.5	29.8	150.0	4/28/2009	600	1,330	<0.001	<0.001	<0.001	<0.003	38.3	Clear No Odor
1	80.9	126.5	29.7	150.0	8/5/2009	308	845	<0.001	<0.001	<0.001	<0.003	25.2	Clear No Odor
1	81.0	126.5	29.6	150.0	11/23/2009	1,080	2,340	<0.001	<0.001	<0.001	<0.003	34.2	Clear No Odor
1	81.1	126.5	29.5	150.0	2/9/2010	1,160	2,240	<0.001	<0.001	<0.001	<0.003	54.6	Clear No Odor
1	81.3	126.5	29.4	150.0	5/28/2010	510	1,190	<0.001	<0.001	<0.001	<0.003	29.0	Clear No Odor
1	81.3	126.5	29.4	150.0	7/27/2010	710	1,500	<0.001	<0.001	<0.001	<0.003	40.8	Clear No Odor
1	81.4	126.5	29.3	250.0	10/27/2010	76	454	<0.001	<0.001	<0.001	<0.003	17.6	Clear No Odor
1	81.5	126.5	29.2	250.0	2/20/2011	68	365	<0.001	<0.001	<0.001	<0.003	17.2	Clear No Odor
1	81.7	126.5	29.2	400.0	6/3/2011	240	707	<0.001	<0.001	<0.001	<0.003	45.9	Clear No Odor
1	81.7	126.5	29.1	400.0	9/1/2011	308	825	<0.001	<0.001	<0.001	<0.003	56.6	Clear No Odor
1	81.8	126.5	29.1	400.0	12/12/2011	52	395	<0.001	<0.001	<0.001	<0.003	28.6	Clear No Odor
1	81.9	126.5	29.0	500.0	2/23/2012	188	605	<0.001	<0.001	<0.001	<0.003	45.2	Clear No Odor
1	81.8	126.5	29.0	500.0	5/30/2012	730	1,740	<0.001	<0.001	<0.001	<0.003	84.9	Clear No Odor
1	81.9	126.5	29.0	500.0	8/23/2012	580	1,280	<0.001	<0.001	<0.001	<0.003	81.2	Clear No Odor
1	81.9	126.5	29.0	500.0	11/19/2012	480	1,170	<0.001	<0.001	<0.001	<0.003	50.4	Clear No Odor
1	82.0	126.5	29.0	500.0	2/13/2013	870	1,680	<0.001	<0.001	<0.001	<0.003	59.7	Clear No Odor

MW	Depth to Water	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
1	82.0	126.5	28.9	500.0	5/29/2013	860	1,940	<0.001	<0.001	<0.001	<0.003	79.3	Clear No Odor
1	82.1	126.5	28.9	500.0	9/6/2013	840	2,000	<0.001	<0.001	<0.001	<0.003	227.0	Clear No Odor
1	82.2	126.5	28.8	500.0	11/14/2013	1,010	2,080	<0.001	<0.001	<0.001	<0.003	61.5	Clear No Odor
1	82.3	126.5	28.7	500.0	3/7/2014	550	1,390	<0.001	<0.001	<0.001	<0.003	63.4	Clear No Odor
1	82.3	126.5	28.7	500.0	6/4/2014	980	2,170	<0.001	<0.001	<0.001	<0.003	53.8	Clear No Odor
1	82.5	126.5	28.6	500.0	8/20/2014	910	2,220	<0.001	<0.001	<0.001	<0.003	50.9	Clear No Odor
1	82.2	126.5	28.8	250.0	12/5/2014	880	2,050	<0.001	<0.001	<0.001	<0.003	53.6	Clear No Odor
1	82.3	126.5	28.7	250.0	3/5/2015	940	2,010	<0.001	<0.001	<0.001	<0.003	50.3	Clear No Odor
1	ххх	126.5	ххх	Running	6/4/2015	540	1,360	<0.001	<0.001	<0.001	<0.003	55.5	Clear No Odor
1	xxx	126.5	ххх	Running	8/21/2015	670	1,480	<0.001	<0.001	<0.001	<0.003	51.0	Clear No Odor
1	xxx	126.5	0.0	200.0	11/13/2015	630	1,500	<0.001	<0.001	<0.001	<0.003	71.4	Clear No Odor
1	xxx	126.5	ххх	200.0	3/14/2016	590	1,370	<0.001	<0.001	<0.001	<0.003	65.3	Clear No odor
1	xxx	126.5	ххх	200.0	5/25/2016	620	1,730	<0.001	<0.001	<0.001	<0.003	68.1	Clear No odor
1	xxx	126.5	ххх	Running	9/13/2016	460	1,140	<0.001	<0.001	<0.001	<0.003	71.0	Clear No odor
1	ххх	126.5	ххх	200.0	11/17/2016	580	1,370	<0.001	<0.001	<0.001	<0.003	63.0	Clear No odor
1	ххх	126.5	ххх	200.0	3/2/2017	380	1,230	<0.001	<0.001	<0.001	<0.003	143.0	Clear No odor
1	ххх	126.5	ххх	Running	6/1/2017	440	1,180	<0.001	<0.001	<0.001	<0.003	68.0	Clear No odor
1	ххх	126.5	ххх	Running	9/11/2017	820	2,110	<0.001	<0.001	<0.001	<0.003	97.0	Clear No odor

MW	Depth to Water	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
1	ххх	126.5	ххх	100.0	12/1/2017	840	1,740	<0.001	<0.001	<0.001	<0.003	81.0	Clear No odor
1	ххх	126.5	ххх	200.0	3/5/2018	870	1,870	<0.001	<0.001	<0.001	<0.003	96.0	Clear No odor
1	XXX	126.5	ххх	200.0	6/4/2018	480	1,200	<0.001	<0.001	<0.001	<0.003	69.4	Clear No odor
1	XXX	126.5	ххх	200.0	9/10/2018	1,180	2,310	<0.001	<0.001	<0.001	<0.003	82.7	Clear No odor
1	xxx	126.5	ххх	200.0	11/16/2018	580	1,120	<0.001	<0.001	<0.001	<0.003	57.2	Clear No odor
1	XXX	126.5	ххх	100.0	3/11/2019	770	1,610	<0.001	<0.001	<0.001	<0.003	57.0	Clear No odor
1	xxx	126.5	ххх	Running	5/31/2019	990	1,940	<0.001	<0.001	<0.001	<0.003	66.0	Clear No odor
1	XXX	126.5	ххх	Running	8/30/2019	720	1,740	<0.001	<0.001	<0.001	<0.003	66.0	Clear No odor
1	XXX	126.5	ххх	100.0	11/21/2019	1,060	1,900	<0.001	<0.001	<0.001	<0.003	66.0	Clear No odor
1	xxx	126.5	ххх	Running	3/9/2020	500	1,160	<0.001	<0.001	<0.001	<0.003	52.7	Clear No odor
1	xxx	126.5	ххх	Running	9/14/2020	660	1,770	ххх	ххх	ххх	ххх	51.1	Clear No odor
1	xxx	126.5	ххх	100.0	3/12/2021	500	1,170	ххх	ххх	ххх	ххх	43.9	Clear No odor
1	xxx	126.5	ххх	Running	6/14/2021	700	1,630	ххх	ххх	ххх	ххх	57.1	Clear No odor
1	xxx	126.5	ххх	Running	9/9/2021	550	1,300	ххх	ххх	ххх	ххх	75.4	Clear No odor
1	xxx	126.5	ххх	100.0	11/11/2021	500	1,160	ххх	ххх	ххх	ххх	73.7	Clear No odor

MW	Depth to Water	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
2	82.0	95.1	2.1	10.0	3/7/2014	60	412	<0.001	<0.001	<0.001	<0.003	37.4	Clear No odor
2	82.0	95.1	2.1	10.0	6/4/2014	64	378	<0.001	<0.001	<0.001	<0.003	39.6	Clear No odor
2	82.1	95.1	2.1	10.0	8/20/2014	64	400	<0.001	<0.001	<0.001	<0.003	37.7	Clear No odor
2	81.7	95.1	2.1	10.0	12/5/2014	68	370	<0.001	<0.001	<0.001	<0.003	30.7	Clear No odor
2	81.9	95.1	2.1	10.0	3/5/2015	36	400	<0.001	<0.001	<0.001	<0.003	59.8	Clear No odor
2	82.1	95.1	2.1	10.0	6/4/2015	64	422	<0.001	<0.001	<0.001	<0.003	31.3	Clear No odor
2	82.3	95.1	2.0	10.0	8/21/2015	40	398	<0.001	<0.001	<0.001	<0.003	45.1	Clear No odor
2	82.3	95.1	2.0	10.0	11/13/2015	68	440	<0.001	<0.001	<0.001	<0.003	34.6	Clear No odor
2	82.4	95.1	2.0	10.0	3/14/2016	68	436	<0.001	<0.001	<0.001	<0.003	45.7	Clear No odor
2	82.4	95.1	2.0	10.0	5/25/2016	32	406	<0.001	<0.001	<0.001	<0.003	58.8	Clear No odor
2	82.4	95.1	2.0	10.0	9/13/2016	56	402	<0.001	<0.001	<0.001	<0.003	77.0	Clear No odor
2	82.5	95.1	2.0	10.0	11/17/2016	60	202	<0.001	<0.001	<0.001	<0.003	64.0	Clear No odor
2	82.6	95.1	2.0	10.0	3/2/2017	60	446	<0.001	<0.001	<0.001	<0.003	76.0	Clear No odor
2	82.7	95.1	2.0	10.0	6/1/2017	84	486	<0.001	<0.001	<0.001	<0.003	57.0	Clear No odor
2	82.9	95.1	1.9	10.0	9/11/2017	68	424	<0.001	<0.001	<0.001	<0.003	80.0	Clear No odor
2	82.8	95.1	2.0	10.0	12/1/2017	32	396	<0.001	<0.001	<0.001	<0.003	59.0	Clear No odor
2	82.9	95.1	1.9	10.0	3/5/2018	56	424	<0.001	<0.001	<0.001	<0.003	67.2	Clear No odor
2	83.0	95.1	1.9	10.0	6/4/2018	64	448	<0.001	<0.001	<0.001	<0.003	72.4	Clear No odor

MW	Depth to Water	Total Depth (ft)		Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sultate	Comments
2	83.1	95.1	1.9	8.0	9/10/2018	60	302	<0.001	<0.001	<0.001	<0.003	69.2	Clear No odor
2	83.4	95.1	1.9	10.0	11/16/2018	64	452	<0.001	<0.001	<0.001	<0.003	66.6	Clear No odor
2	83.5	95.1	1.8	10.0	3/11/2019	60	368	<0.001	<0.001	<0.001	<0.003	66.0	Clear No odor
2	83.6	95.1	1.8	10.0	5/31/2019	56	413	<0.001	<0.001	<0.001	<0.003	62.0	Clear No odor
2	83.6	95.1	1.8	10.0	8/30/2019	56	422	<0.001	<0.001	<0.001	<0.003	56.0	Clear No odor
2	83.7	95.1	1.8	10.0	11/21/2019	56	241	<0.001	<0.001	<0.001	<0.003	60.0	Clear No odor
2	83.7	95.1	1.8	10.0	3/9/2020	60	424	<0.001	<0.001	<0.001	<0.003	61.9	Clear No odor
2	83.8	95.1	1.8	10.0	9/14/2020	68	353	ххх	ххх	ххх	ххх	55.1	Clear No odor
2	84.3	95.1	1.7	10.0	3/12/2021	52	193	ххх	ххх	ххх	ххх	56.3	Clear No odor
2	84.3	95.1	1.7	10.0	6/14/2021	60	430	ххх	ххх	ххх	ххх	56.9	Clear No odor
2	84.4	95.1	1.7	10.0	9/9/2021	56	403	ххх	ххх	ххх	ххх	67.6	Clear No odor
2	84.4	95.1	1.7	10.0	11/11/2021	52	419	ххх	ххх	ххх	ххх	71.3	Clear No odor



March 22, 2021

KATIE JONES Rice Operating Company 112 W. Taylor Hobbs, NM 88240

RE: VACUUM F-33 BOOT

Enclosed are the results of analyses for samples received by the laboratory on 03/16/21 13:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



Analytical Results For:

Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received:	03/16/2021	Sampling Date:	03/12/2021
Reported:	03/22/2021	Sampling Type:	Water
Project Name:	VACUUM F-33 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC33 F - LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H210660-01)

Chloride, SM4500Cl-B	mg,	/L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	500	4.00	03/17/2021	ND	104	104	100	3.92	
Sulfate 375.4	mg,	/L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	43.9	10.0	03/17/2021	ND	19.2	96.0	20.0	14.2	
TDS 160.1	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	1170	5.00	03/19/2021	ND	546	109	500	2.49	

Sample ID: MONITOR WELL #2 (H210660-02)

Chloride, SM4500Cl-B	mg	/L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	52.0	4.00	03/17/2021	ND	104	104	100	3.92	
Sulfate 375.4	mg	/L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	56.3	10.0	03/17/2021	ND	19.2	96.0	20.0	14.2	
TDS 160.1	mg	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	193	5.00	03/19/2021	ND	546	109	500	2.49	

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PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager

Received by OCD: 3/15/2022 3:11:03 PM





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager

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June 21, 2021

KATIE JONES Rice Operating Company 112 W. Taylor Hobbs, NM 88240

RE: VACUUM F-33 BOOT

Enclosed are the results of analyses for samples received by the laboratory on 06/15/21 13:31.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



Analytical Results For:

Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received:	06/15/2021	Sampling Date:	06/14/2021
Reported:	06/21/2021	Sampling Type:	Water
Project Name:	VACUUM F-33 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	T17S-R35E-SEC33 F - LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H211525-01)

Chloride, SM4500Cl-B	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	700	4.00	06/16/2021	ND	100	100	100	0.00	
Sulfate 375.4	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	57.1	10.0	06/16/2021	ND	21.4	107	20.0	12.4	
TDS 160.1	mg,	/L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	1630	5.00	06/18/2021	ND	532	106	500	2.99	

Sample ID: MONITOR WELL #2 (H211525-02)

Chloride, SM4500Cl-B	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	60.0	4.00	06/16/2021	ND	100	100	100	0.00	
Sulfate 375.4	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	56.9	10.0	06/16/2021	ND	21.4	107	20.0	12.4	
TDS 160.1	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	430	5.00	06/17/2021	ND	532	106	500	2.99	

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager

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Received by OCD: 3/15/2022 3:11:03 PM

Released to Imaging: 7/28/2023 3:44:20 PM

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September 15, 2021

KATIE JONES Rice Operating Company 112 W. Taylor Hobbs, NM 88240

RE: VACUUM F-33 BOOT

Enclosed are the results of analyses for samples received by the laboratory on 09/10/21 15:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



Analytical Results For:

Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received:	09/10/2021	Sampling Date:	09/09/2021
Reported:	09/15/2021	Sampling Type:	Water
Project Name:	VACUUM F-33 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC33 F - LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H212519-01)

Chloride, SM4500Cl-B	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	550	4.00	09/13/2021	ND	104	104	100	3.92	
Sulfate 375.4	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	75.4	10.0	09/14/2021	ND	20.5	103	20.0	7.55	
TDS 160.1	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	1300	5.00	09/14/2021	ND	275	91.7	300	5.59	

Sample ID: MONITOR WELL #2 (H212519-02)

Chloride, SM4500Cl-B	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	56.0	4.00	09/13/2021	ND	104	104	100	3.92	
Sulfate 375.4	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	67.6	10.0	09/14/2021	ND	20.5	103	20.0	7.55	
TDS 160.1	mg,	/L	Analyze	d By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	403	5.00	09/14/2021	ND	275	91.7	300	5.59	

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager

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Fax (575) 393-2476 Company Name:		L TO								P	0#									A	NA	LYS	SIS	RE	QL	JES	T							Page
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November 18, 2021

KATIE JONES Rice Operating Company 112 W. Taylor Hobbs, NM 88240

RE: VACUUM F-33 BOOT

Enclosed are the results of analyses for samples received by the laboratory on 11/15/21 14:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



Analytical Results For:

Rice Operating Company KATIE JONES 112 W. Taylor Hobbs NM, 88240 Fax To: (575) 397-1471

Received:	11/15/2021	Sampling Date:	11/11/2021
Reported:	11/18/2021	Sampling Type:	Water
Project Name:	VACUUM F-33 BOOT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC33 F - LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H213251-01)

Chloride, SM4500Cl-B	mg,	/L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	500	4.00	11/16/2021	ND	100	100	100	0.00	
Sulfate 375.4	mg,	/L	Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	73.7	10.0	11/18/2021	ND	22.1	110	20.0	7.07	
TDS 160.1	mg/L		Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	1160	5.00	11/17/2021	ND	512	102	500	1.51	

Sample ID: MONITOR WELL #2 (H213251-02)

Chloride, SM4500Cl-B	mg,	/L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	52.0	4.00	11/16/2021	ND	100	100	100	0.00	
Sulfate 375.4	mg,	/L	Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	71.3	10.0	11/18/2021	ND	22.1	110	20.0	7.07	
TDS 160.1	mg,	/L	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	419	5.00	11/17/2021	ND	512	102	500	1.51	

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*=Accredited Analyte

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Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager

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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

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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 90575

CONDITIONS										
Operator:	OGRID:									
RICE OPERATING COMPANY	19174									
122 W Taylor	Action Number:									
Hobbs, NM 88240	90575									
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)									

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2021 Annual Report for Vacuum F-33 Boot: Content Satisfactory 1. Continue to monitor and sample groundwater quarterly for 2023. 2. Continue recovery for chlorinated impacted groundwater. 3. Submit Annual Report for 2023 no later than April 1, 2024.	7/28/2023