L Peter Galusky, Jr PE

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

April 1st, 2020

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

Re: **2019 Annual Report**
Rice Operating Company – Vacuum SWD System
Vacuum F-34 Vent Boot UL F, Section 34, Township 17S, Range 35E
NMOCD Case Number 1R425-67

Sent via E-mail

Mr. Billings:

This Annual Report is submitted to NMOCD for Rice Operating Company's (ROC) Vacuum F-34 Vent Boot project in Lea County, New Mexico.

Background and Brief Project History

The site is located approximately 2.5 miles east-southeast of Buckeye, New Mexico (Appendix Figure 1). The regional topography slopes gently toward the southeast. Groundwater is encountered at a depth of approximately 70 ft below ground surface in the Ogallala Formation.

The junction box at this location was removed during the Vacuum SWD system abandonment and conducted an initial soils evaluation in 2008. The results of an NMOCD approved Investigation and Characterization Plan (ICP) indicated elevated levels of soil and groundwater chlorides, and a Notification of Groundwater Impact was submitted to NMOCD on October 26th, 2010. ROC installed a double synthetic subsurface soil liner and completed surface restoration in May 2011 and NMOCD granted vadose zone remediation termination status, or 'soil closure,' on September 15th, 2011. A Project Update was submitted to NMOCD on August 8th, 2013 which proposed continued groundwater monitoring and limited groundwater withdrawal from the near-source well (MW-1) to determine if this would effectively reduce groundwater chloride mass. NMOCD approved this work in August 13th, 2013. Monitor well locations are shown in the Appendix Figure 2.

Past Year and Current Status

ROC began groundwater recovery from MW-1 in April of 2014. A total of 12,107 bbls of groundwater and approximately 965 kg of chloride have been removed since pumping began

through October 2019 when the system was shut down for winter. The removed groundwater was hauled to off-site locations for beneficial use.

Groundwater withdrawals have contributed to a substantial reduction in near-source groundwater chloride concentrations, as these have dropped in the near-source monitor well (MW-1) from an average of 865 mg/l in 2014 to 381 mg/l in 2019 … a 56% decrease (Appendix Figure 3, Table 1). This also suggests that the mass of chlorides in the groundwater is sufficiently small that natural dilution and limited pumping can reduce their concentration.

Chlorides in the up-gradient monitor well (MW-2) remained below 100 mg/l as they mostly have from 2011 through 2019 (Appendix Figure 3, Table 2).

BTEX has remained below laboratory detection levels in both up-gradient and near-source monitor wells as it has since sampling began (Appendix Tables 1&2).

Given that BTEX concentrations have been below detectable limits since installation, ROC requests to suspend BTEX sampling in both wells (MW-1 and MW-2) in 2020. Further, due to the current climate, and in the interest of safety, ROC proposes to reduce groundwater monitoring from quarterly to semi-annually for the remainder of this year. In addition, ROC is proposing to suspend groundwater recovery for this year. These proposals are only temporary and regularly scheduled groundwater monitoring and recovery will commence as soon as possible.

ROC is the service provider (agent) for the Vacuum Saltwater Disposal (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 SWD system is now abandoned. We thus submit this report for your review and consideration.

Please contact either myself or Katie Jones Davis at Rice Operating Company if you have any questions or need additional information.

Thank you.

Sincerely,

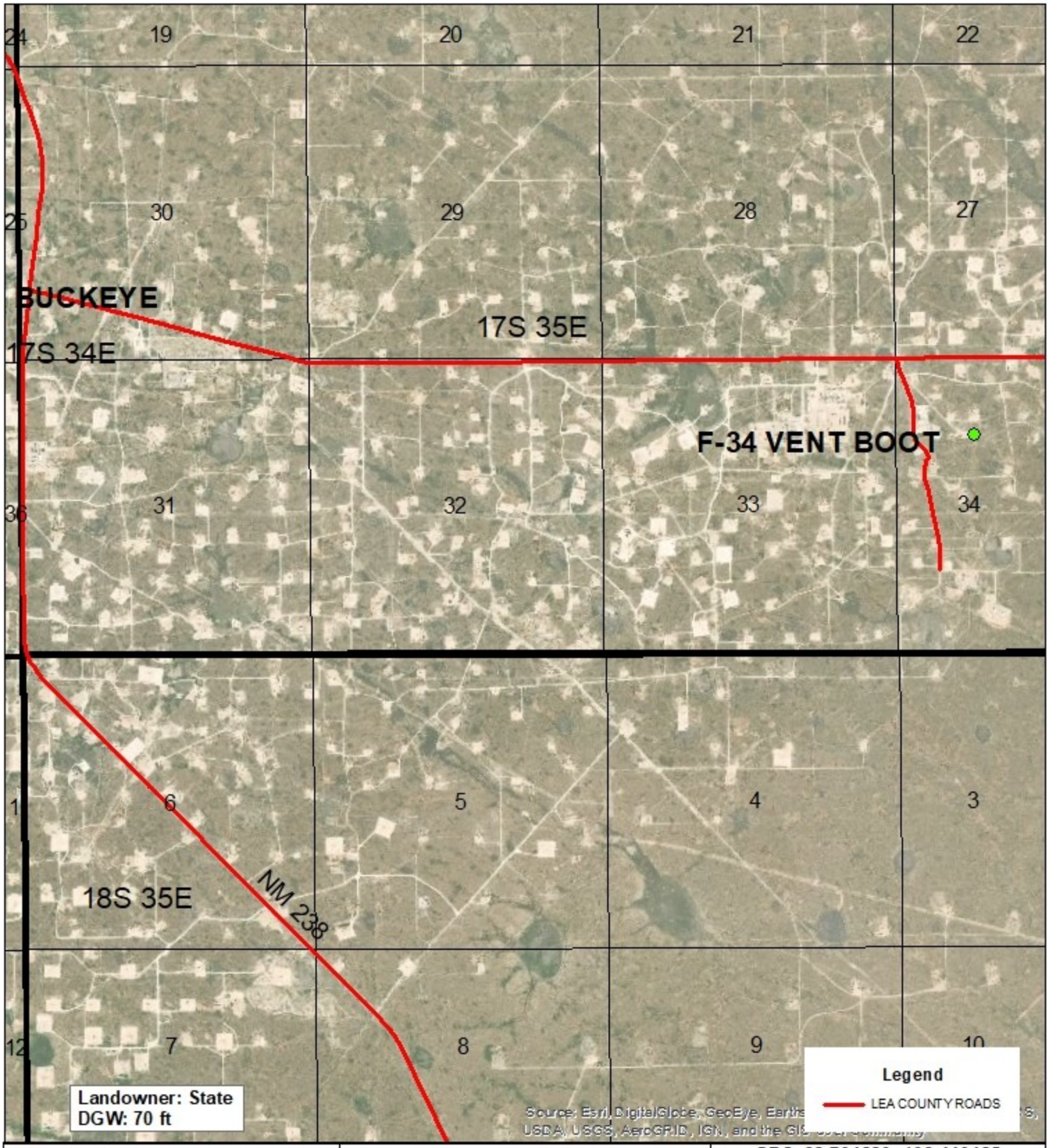
L. Peter (Pete) Galusky, Jr PE

Copy: Rice Operating Company
Attachments: … as noted in text

APPENDIX

Geographic Location

FIGURE 1



RICE OPERATING COMPANY
ROC
SINCE 1955

VACUUM
F-34 VENT BOOT
1R425-67

UL F SECTION 34
T17S R35E
LEA COUNTY, NM

GPS: 32.794820 -103.449485
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 1,000 2,000
Feet

N
W E
S

Drawing date: 2/4/20
Drawn by: T. Grieco

APPENDIX

Site Map

FIGURE 2

RICE OPERATING COMPANY
ROC
SINCE 1955

VACUUM
F-34 VENT BOOT
1R425-67

UL F SECTION 34
T17S R35E
LEA COUNTY, NM

GPS: 32.794820 -103.449485
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 10 20
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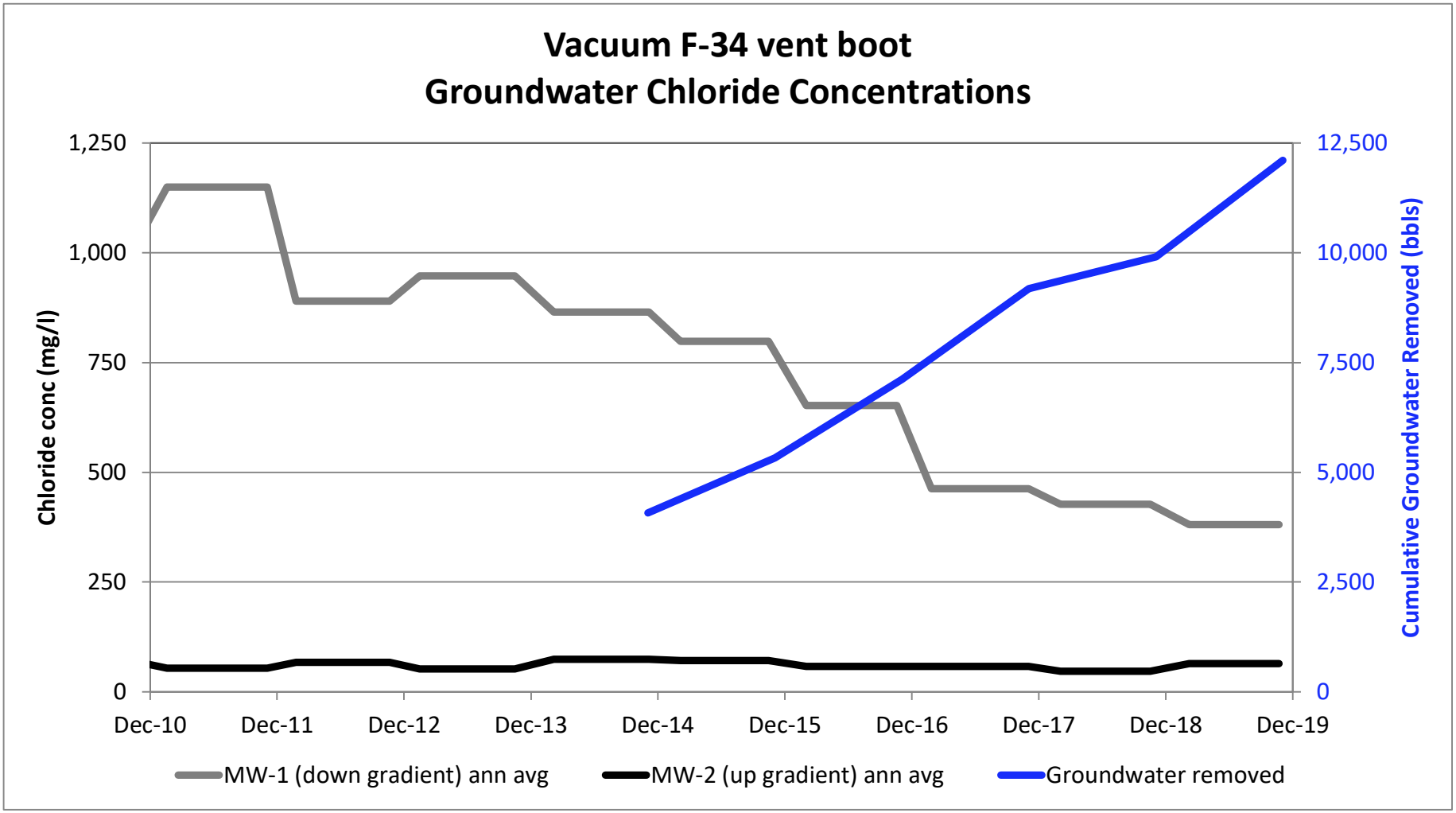
Vacuum F-34 vent boot
Groundwater Chloride Concentrations
Chloride conc (mg/l)
Cumulative Groundwater Removed (bbls)
1,250
1,000
750
500
250
0
12,500
10,000
7,500
5,000
2,500
0
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
Dec-16
Dec-17
Dec-18
Dec-19
MW-1 (down gradient) ann avg
MW-2 (up gradient) ann avg
Groundwater removed

APPENDIX

Table 1 - MW-1 (down-gradient) groundwater data (concentrations in mg/l)

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl-	ann avg Cl-	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	69.9	118.4	31.5	100	5/28/2010	940	983	2,030	<0.001	<0.001	<0.001	<0.003	91	Clear no odor
1	69.7	118.4	31.6	100	7/27/2010	1,040	983	2,130	<0.001	<0.001	<0.001	<0.003	99	Clear no odor
1	69.8	118.4	31.6	100	10/27/2010	970	983	2,300	<0.001	<0.001	<0.001	<0.003	95	Clear no odor
1	69.9	118.4	31.5	100	2/18/2011	1,030	1,150	2,010	<0.001	<0.001	<0.001	<0.003	86	Clear no odor
1	70.1	118.4	31.4	100	6/3/2011	1,150	1,150	2,160	<0.001	<0.001	<0.001	<0.003	90	Clear no odor
1	70.1	118.4	31.4	100	9/1/2011	1,160	1,150	2,380	<0.001	<0.001	<0.001	<0.003	87	Clear no odor
1	70.1	118.4	31.4	100	12/3/2011	1,260	1,150	2,470	<0.001	<0.001	<0.001	<0.003	87	Clear no odor
1	70.2	118.4	31.3	100	2/23/2012	1,060	890	2,360	<0.001	<0.001	<0.001	<0.003	98	Clear no odor
1	70.3	118.4	31.3	100	5/31/2012	930	890	2,130	<0.001	<0.001	<0.001	<0.003	81	Clear no odor
1	70.0	118.4	31.4	100	8/24/2012	980	890	2,060	<0.001	<0.001	<0.001	<0.003	81	Clear no odor
1	70.1	118.4	31.4	100	11/19/2012	590	890	1,320	<0.001	<0.001	<0.001	<0.003	78	Clear no odor
1	70.2	118.4	31.3	100	2/13/2013	960	948	1,990	<0.001	<0.001	<0.001	<0.003	76	Clear no odor
1	70.6	118.4	31.1	100	5/29/2013	1,020	948	2,320	<0.001	<0.001	<0.001	<0.003	71	Clear no odor
1	70.8	118.4	30.9	100	9/5/2013	920	948	2,150	<0.001	<0.001	<0.001	<0.003	289	Clear no odor
1	XXX	118.4	XXX	100	11/14/2013	890	948	2,040	<0.001	<0.001	<0.001	<0.003	60	Clear no odor
1	XXX	118.4	XXX	100	3/6/2014	1,040	865	2,080	<0.001	<0.001	<0.001	<0.003	55	Clear no odor
1	XXX	118.4	XXX	running	6/4/2014	769	865	1,490	<0.001	<0.001	<0.001	<0.003	82	Clear no odor
1	XXX	118.4	XXX	running	8/23/2014	630	865	1,570	<0.001	<0.001	<0.001	<0.003	80	Clear no odor
1	XXX	118.4	XXX	100	12/4/2014	1,020	865	2,170	<0.001	<0.001	<0.001	<0.003	78	Clear no odor
1	XXX	118.4	XXX	100	3/5/2015	810	798	1,850	<0.001	<0.001	<0.001	<0.003	53	Clear no odor
1	XXX	118.4	XXX	running	6/4/2015	432	798	1,140	<0.001	<0.001	<0.001	<0.003	66	Clear no odor
1	70.6	118.4	31	100	8/24/2015	1,060	798	1,950	<0.001	<0.001	<0.001	<0.003	35	Clear no odor
1	XXX	118.4	0	200	11/13/2015	890	798	1,770	<0.001	<0.001	<0.001	<0.003	32	Clear no odor
1	XXX	118.4	XXX	200	2/29/2016	810	653	1,700	<0.001	<0.001	<0.001	<0.003	68	Clear No odor
1	XXX	118.4	XXX	200	5/20/2016	620	653	1,530	<0.001	<0.001	<0.001	<0.003	64	Clear No odor
1	XXX	118.4	XXX	running	9/13/2016	710	653	1,930	<0.001	<0.001	<0.001	<0.003	73	Clear No odor
1	XXX	118.4	XXX	100	11/16/2016	470	653	1,110	<0.001	<0.001	<0.001	<0.003	79	Clear No odor
1	XXX	118.4	XXX	100	2/23/2017	400	463	1,470	<0.001	<0.001	<0.001	<0.003	193	Clear No odor
1	XXX	118.4	XXX	running	5/26/2017	400	463	1,060	<0.001	<0.001	<0.001	<0.003	66	Clear No odor
1	XXX	118.4	XXX	running	9/11/2017	490	463	1,120	<0.001	<0.001	<0.001	<0.003	79	Clear No odor
1	XXX	118.4	XXX	100	11/30/2017	560	463	1,310	<0.001	<0.001	<0.001	<0.003	75	Clear No odor
1	XXX	118.4	XXX	100	3/1/2018	550	427	1,260	<0.001	<0.001	<0.001	<0.003	110	Clear No odor
1	XXX	118.4	XXX	100	6/1/2018	470	427	1,100	<0.001	<0.001	<0.001	<0.003	39	Clear No odor
1	XXX	118.4	XXX	100	9/7/2018	400	427	840	<0.001	<0.001	<0.001	<0.003	66	Clear No odor
1	XXX	118.4	XXX	100	11/15/2018	288	427	452	<0.001	<0.001	<0.001	<0.003	129	Clear No odor
1	XXX	118.4	XXX	100	3/7/2019	530	381	1,160	<0.001	<0.001	<0.001	<0.003	74	Clear No odor
1	XXX	118.4	XXX	Running	5/30/2019	336	381	881	<0.001	<0.001	<0.001	<0.003	61	Clear No odor
1	XXX	118.4	XXX	Running	8/30/2019	380	381	932	<0.001	<0.001	<0.001	<0.003	61	Clear No odor
1	XXX	118.4	XXX	100	11/20/2019	276	381	737	<0.001	<0.001	<0.001	<0.003	56	Clear No odor

APPENDIX

Table 2 - MW-2 (up-gradient) groundwater data (concentrations in mg/l)

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl-	ann avg Cl-	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	70.5	84.2	2.2	10	11/22/2010	68	68	340	<0.001	<0.001	<0.001	<0.003	72	Clear no odor
2	70.6	84.3	2.2	10	2/18/2011	60	54	403	<0.001	<0.001	<0.001	<0.003	51	Clear no odor
2	70.7	84.3	2.2	10	6/3/2011	56	54	384	<0.001	<0.001	<0.001	<0.003	57	Clear no odor
2	70.7	84.3	2.2	10	9/1/2011	56	54	407	<0.001	<0.001	<0.001	<0.003	59	Clear no odor
2	70.8	84.3	2.2	10	12/3/2011	44	54	350	<0.001	<0.001	<0.001	<0.003	54	Clear no odor
2	70.9	84.3	2.1	10	2/23/2012	116	67	448	<0.001	<0.001	<0.001	<0.003	62	Clear no odor
2	70.9	84.3	2.1	10	5/31/2012	40	67	422	<0.001	<0.001	<0.001	<0.003	64	Clear no odor
2	71.1	84.3	2.1	10	8/24/2012	60	67	399	<0.001	<0.001	<0.001	<0.003	51	Clear no odor
2	71.2	84.3	2.1	10	11/19/2012	52	67	398	<0.001	<0.001	<0.001	<0.003	48	Clear no odor
2	71.4	84.3	2.1	10	2/13/2013	60	52	380	<0.001	<0.001	<0.001	<0.003	55	Clear no odor
2	71.7	84.3	2.0	10	5/29/2013	32	52	595	<0.001	<0.001	<0.001	<0.003	43	Clear no odor
2	71.9	84.3	2.0	10	9/5/2013	56	52	419	<0.001	<0.001	<0.001	<0.003	54	Clear no odor
2	71.8	84.3	2.0	10	11/14/2013	60	52	419	<0.001	<0.001	<0.001	<0.003	57	Clear no odor
2	71.9	84.3	2.0	10	3/6/2014	64	74	292	<0.001	<0.001	<0.001	<0.003	57	Clear no odor
2	71.8	84.3	2.0	10	6/4/2014	68	74	406	<0.001	<0.001	<0.001	<0.003	54	Clear no odor
2	71.9	84.3	2.0	10	8/23/2014	72	74	414	<0.001	<0.001	<0.001	<0.003	50	Clear no odor
2	71.1	84.3	2.1	10	12/4/2014	92	74	456	<0.001	<0.001	<0.001	<0.003	41	Clear no odor
2	71.1	84.3	2.1	10	3/5/2015	100	71	500	<0.001	<0.001	<0.001	<0.003	44	Clear no odor
2	71.2	84.3	2.1	10	6/4/2015	64	71	446	<0.001	<0.001	<0.001	<0.003	48	Clear no odor
2	71.7	84.3	2.0	10	8/24/2015	36	71	470	<0.001	<0.001	<0.001	<0.003	39	Clear no odor
2	71.9	84.3	2.0	10	11/13/2015	84	71	346	<0.001	<0.001	<0.001	<0.003	62	Clear no odor
2	71.9	84.3	2.0	10	2/29/2016	40	58	436	<0.001	<0.001	<0.001	<0.003	63	Clear No odor
2	71.8	84.3	2.0	10	5/20/2016	40	58	356	<0.001	<0.001	<0.001	<0.003	65	Clear No odor
2	71.9	84.3	2.0	10	9/13/2016	56	58	392	<0.001	<0.001	<0.001	<0.003	79	Clear No odor
2	72.0	84.3	2.0	10	11/16/2016	96	58	466	<0.001	<0.001	<0.001	<0.003	32	Clear No odor
2	72.0	84.3	2.0	10	2/23/2017	52	58	424	<0.001	<0.001	<0.001	<0.003	60	Clear No odor
2	71.1	84.3	2.0	10	5/26/2017	92	58	522	<0.001	<0.001	<0.001	<0.003	52	Clear No odor
2	72.2	84.3	1.9	10	9/11/2017	40	58	278	<0.001	<0.001	<0.001	<0.003	64	Clear No odor
2	72.2	84.3	1.9	10	11/30/2017	48	58	444	<0.001	<0.001	<0.001	<0.003	62	Clear No odor
2	72.2	84.3	1.9	10	3/1/2018	40	47	230	<0.001	<0.001	<0.001	<0.003	64	Clear No odor
2	72.3	84.3	1.9	10	6/1/2018	68	47	402	<0.001	<0.001	<0.001	<0.003	79	Clear No odor
2	72.4	84.3	1.9	8	9/7/2018	40	47	482	<0.001	<0.001	<0.001	<0.003	59	Clear No odor
2	72.5	84.3	1.9	8	11/15/2018	40	47	196	<0.001	<0.001	<0.001	<0.003	64	Clear No odor
2	72.6	84.3	1.9	10	3/7/2019	96	64	546	<0.001	<0.001	<0.001	<0.003	61	Clear No odor
2	72.7	84.3	1.9	10	5/30/2019	36	64	445	<0.001	<0.001	<0.001	<0.003	62	Clear No odor
2	72.8	84.3	1.8	10	8/30/2019	60	64	456	<0.001	<0.001	<0.001	<0.003	57	Clear No odor
2	73.1	84.3	1.8	8	11/20/2019	64	64	407	<0.001	<0.001	<0.001	<0.003	55	Clear No odor

CARDINAL Laboratories

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

March 19, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM F-34 VENT

Enclosed are the results of analyses for samples received by the laboratory on 03/11/19 13:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	03/11/2019	Sampling Date:	03/07/2019
Reported:	03/19/2019	Sampling Type:	Water
Project Name:	VACUUM F-34 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC34 F - LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H900963-01)

BTEX 8021B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/15/2019	ND	0.020	100	0.0200	2.37	
Toluene*	<0.001	0.001	03/15/2019	ND	0.019	97.1	0.0200	0.723	
Ethylbenzene*	<0.001	0.001	03/15/2019	ND	0.019	93.8	0.0200	2.54	
Total Xylenes*	<0.003	0.003	03/15/2019	ND	0.062	103	0.0600	0.149	
Total BTEX	<0.006	0.006	03/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**530**	4.00	03/13/2019	ND	108	108	100	3.77	

Sulfate 375.4 mg/L Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**74.5**	10.0	03/14/2019	ND	21.3	106	20.0	6.80	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1160**	5.00	03/14/2019	5.00	514	97.5	527	2.27	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	03/11/2019	Sampling Date:	03/07/2019
Reported:	03/19/2019	Sampling Type:	Water
Project Name:	VACUUM F-34 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC34 F - LEA CTY, NM		

Sample ID: MONITOR WELL #2 (H900963-02)

BTEX 8021B mg/L **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/15/2019	ND	0.020	100	0.0200	2.37	
Toluene*	<0.001	0.001	03/15/2019	ND	0.019	97.1	0.0200	0.723	
Ethylbenzene*	<0.001	0.001	03/15/2019	ND	0.019	93.8	0.0200	2.54	
Total Xylenes*	<0.003	0.003	03/15/2019	ND	0.062	103	0.0600	0.149	
Total BTEX	<0.006	0.006	03/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**96.0**	4.00	03/13/2019	ND	108	108	100	3.77	

Sulfate 375.4 mg/L **Analyzed By: JH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**61.0**	10.0	03/14/2019	ND	21.3	106	20.0	6.80	

TDS 160.1 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**546**	5.00	03/14/2019	5.00	514	97.5	527	2.27	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, NM 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company — PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 — Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: Vacuum F-34 Vent
Project Location: T17S-R35E-Sec34 F ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME
H900963																
1	Monitor Well #1	G	3	X					2				1		3/7	11:50
2	Monitor Well #2	G	3	X					2				1		3/7	8:45

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X																	X	X	X	
	X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 3/11/2019	Time: 13:25	Received by: Tamara Oldaker
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)

Date: 3-11-19 Time: 13:25

Phone Results		Yes		No
Fax Results		Yes		No — Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool — Yes ✓ / No; Intact — Yes ✓ / No

CHECKED BY: (Initials) TO.

CARDINAL Laboratories

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

June 06, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM F-34 VENT

Enclosed are the results of analyses for samples received by the laboratory on 06/03/19 10:12.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	06/03/2019	Sampling Date:	05/30/2019
Reported:	06/06/2019	Sampling Type:	Water
Project Name:	VACUUM F-34 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC34 F - LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H901929-01)

BTEX 8021B mg/L Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	06/04/2019	ND	0.021	106	0.0200	2.52	
Toluene*	<0.001	0.001	06/04/2019	ND	0.022	110	0.0200	1.67	
Ethylbenzene*	<0.001	0.001	06/04/2019	ND	0.020	101	0.0200	2.26	
Total Xylenes*	<0.003	0.003	06/04/2019	ND	0.063	105	0.0600	2.19	
Total BTEX	<0.006	0.006	06/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**336**	4.00	06/04/2019	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**61.3**	10.0	06/04/2019	ND	21.1	105	20.0	4.96	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**881**	5.00	06/06/2019	ND	520	98.7	527	2.05	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	06/03/2019	Sampling Date:	05/30/2019
Reported:	06/06/2019	Sampling Type:	Water
Project Name:	VACUUM F-34 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC34 F - LEA CTY, NM		

Sample ID: MONITOR WELL #2 (H901929-02)

BTEX 8021B mg/L Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	06/04/2019	ND	0.021	106	0.0200	2.52	
Toluene*	<0.001	0.001	06/04/2019	ND	0.022	110	0.0200	1.67	
Ethylbenzene*	<0.001	0.001	06/04/2019	ND	0.020	101	0.0200	2.26	
Total Xylenes*	<0.003	0.003	06/04/2019	ND	0.063	105	0.0600	2.19	
Total BTEX	<0.006	0.006	06/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**36.0**	4.00	06/04/2019	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**62.2**	10.0	06/04/2019	ND	21.1	105	20.0	4.96	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**445**	5.00	06/06/2019	ND	520	98.7	527	2.05	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, NM 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: Vacuum F-34 Vent
Project Location: T17S-R35E-Sec34 F ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H901929

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME
1	Monitor Well #1	G	3	X				2				1		5/30	11:00
2	Monitor Well #2	G	3	X				2				1		5/30	9:15

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB #	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
1		X																	X	X	X	
2		X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 6/3/2019	Time: 8:00	Received by: Damon Johnson	Date: 6/3/2019	Time: 8:01
Relinquished by: Damon Johnson	Date: 6/3/2019	Time: 10:12	Received By: (Laboratory Staff) Tamara Oldaker	Date: 6-3-19	Time: 10:12

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ✓ / No ; Intact: Yes ✓ / No

CHECKED BY: (Initials) TO

Phone Results: ☐ Yes ☐ No
Fax Results: ☐ Yes ☐ No Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net

CARDINAL Laboratories

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

September 12, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM F-34 VENT

Enclosed are the results of analyses for samples received by the laboratory on 09/04/19 14:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	09/04/2019	Sampling Date:	08/30/2019
Reported:	09/12/2019	Sampling Type:	Water
Project Name:	VACUUM F-34 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC34 F - LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H903057-01)

BTEX 8021B mg/L Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	09/12/2019	ND	0.021	104	0.0200	1.81	
Toluene*	<0.001	0.001	09/12/2019	ND	0.021	104	0.0200	0.145	
Ethylbenzene*	<0.001	0.001	09/12/2019	ND	0.021	107	0.0200	0.975	
Total Xylenes*	<0.003	0.003	09/12/2019	ND	0.065	108	0.0600	1.24	
Total BTEX	<0.006	0.006	09/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *81.8 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**380**	4.00	09/06/2019	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**61.4**	10.0	09/06/2019	ND	18.3	91.6	20.0	9.85	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**932**	5.00	09/06/2019	ND	544	103	527	2.98	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	09/04/2019	Sampling Date:	08/30/2019
Reported:	09/12/2019	Sampling Type:	Water
Project Name:	VACUUM F-34 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC34 F - LEA CTY, NM		

Sample ID: MONITOR WELL #2 (H903057-02)

BTEX 8021B mg/L Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	09/12/2019	ND	0.021	104	0.0200	1.81	
Toluene*	<0.001	0.001	09/12/2019	ND	0.021	104	0.0200	0.145	
Ethylbenzene*	<0.001	0.001	09/12/2019	ND	0.021	107	0.0200	0.975	
Total Xylenes*	<0.003	0.003	09/12/2019	ND	0.065	108	0.0600	1.24	
Total BTEX	<0.006	0.006	09/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *90.7 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**60.0**	4.00	09/06/2019	ND	100	100	100	0.00	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**57.4**	10.0	09/06/2019	ND	18.3	91.6	20.0	9.85	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**456**	5.00	09/09/2019	ND	539	102	527	9.17	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, NM 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: Vacuum F-34 Vent
Project Location: T17S-R35E-Sec34 F ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME
H903057	Monitor Well #1	G	3	X				2				1		8/30	8:55
	Monitor Well #2	G	3	X				2				1		8/30	10:10

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X																	X	X	X	
	X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 9/4/2019	Time: 14:25	Received by: Tamara Oldaker 9-4-19 14:25
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff) Date: Time:

Phone Results		Yes		No
Fax Results		Yes		No Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes / Intact: Yes; Cool: No / Intact: No

CHECKED BY: (Initials) T.O.

CARDINAL Laboratories

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

December 04, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM F-34 VENT

Enclosed are the results of analyses for samples received by the laboratory on 11/21/19 12:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	11/21/2019	Sampling Date:	11/20/2019
Reported:	12/04/2019	Sampling Type:	Water
Project Name:	VACUUM F-34 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC34 F - LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H903953-01)

BTEX 8021B mg/L **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/24/2019	ND	0.019	96.8	0.0200	0.956	
Toluene*	<0.001	0.001	11/24/2019	ND	0.019	93.7	0.0200	0.628	
Ethylbenzene*	<0.001	0.001	11/24/2019	ND	0.019	95.4	0.0200	0.648	
Total Xylenes*	<0.003	0.003	11/24/2019	ND	0.058	95.9	0.0600	0.741	
Total BTEX	<0.006	0.006	11/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.8 %* *58.2-133*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**276**	4.00	11/22/2019	ND	104	104	100	0.00	

Sulfate 375.4 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**55.6**	10.0	11/24/2019	ND	22.9	114	20.0	1.41	

TDS 160.1 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**737**	5.00	11/26/2019	ND	523	99.2	527	2.39	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	11/21/2019	Sampling Date:	11/20/2019
Reported:	12/04/2019	Sampling Type:	Water
Project Name:	VACUUM F-34 VENT	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC34 F - LEA CTY, NM		

Sample ID: MONITOR WELL #2 (H903953-02)

BTEX 8021B mg/L **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/24/2019	ND	0.019	96.8	0.0200	0.956	
Toluene*	<0.001	0.001	11/24/2019	ND	0.019	93.7	0.0200	0.628	
Ethylbenzene*	<0.001	0.001	11/24/2019	ND	0.019	95.4	0.0200	0.648	
Total Xylenes*	<0.003	0.003	11/24/2019	ND	0.058	95.9	0.0600	0.741	
Total BTEX	<0.006	0.006	11/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.5 %* *58.2-133*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**64.0**	4.00	11/22/2019	ND	104	104	100	0.00	

Sulfate 375.4 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**55.1**	10.0	11/24/2019	ND	22.9	114	20.0	1.41	

TDS 160.1 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**407**	5.00	11/27/2019	ND	515	97.7	527	15.3	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Cardinal Laboratories

*=Accredited Analyte

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Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: Vacuum F-34 Vent
Project Location: T17S-R35E-Sec34 F ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H903953 LAB # (LAB USE ONLY)

	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME
1	Monitor Well #1	G	3	X					2				1		11/20	10:15
2	Monitor Well #2	G	3	X					2				1		11/20	13:15

ANALYSIS REQUEST

(Circle or Specify Method No.)

	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
1		X																	X	X	X	
2		X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 11/21/2019	Time: 12:55	Received by:	Date: 11-21-19	Time: 12:55
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:

Phone Results		Yes		No	
Fax Results		Yes		No	Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition	Cool	Intact
Yes	✓	✓
No		

CHECKED BY: (Initials) TO