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 K-35-1 Boot, UL K, Sec 35, T17S, R35E
OCD Case Number 1R425-03

Sent by E-mail

Mr. Billings:

This letter summarizes remediation history and progress made for this project over the past calendar year. Location and site schematic maps are given in the Appendix (Figures 1 and 2, respectively).

OCD granted termination of soil remediation requirements (soil closure) on October 13th, 2011, allowing for the cessation of groundwater withdrawals and stipulating that groundwater monitoring must continue semi-annually at wells MW-2, MW-3 and MW-4.

A Groundwater Recovery Notification was submitted to the NMOCD on September 4th, 2013 and NMOCD approved the notification on September 5th, 2013. Groundwater recovery began from RW-1 on September 13th, 2013. According to the NMOCD approved Groundwater Recovery Notification, ROC began sampling all the wells (MW-1, MW-2, MW-3, MW-4, and RW-1) on a semi-annual (twice a year) basis in 2013, and a quarterly basis in 2014.

Brief Summary of Groundwater Monitoring and Present Status

- Approximately 32,110 barrels of chloride-affected groundwater have been withdrawn from a near-source recovery well (RW-1) over the period June 2008 through October 2019 resulting in the removal of an estimated 2,359 kg of chlorides (Appendix - Figure 3). The removed groundwater was hauled to an off-site location and utilized for a beneficial use.

- The average annual groundwater chloride concentration in the near/at-source monitor well, MW-4, decreased substantially from 365 mg/l in 2018 to 137 mg/l in 2019 (Appendix - Figure 3, Table 1).

- The average annual groundwater chloride concentration in the down-gradient monitor well, MW-2, was little changed rising from 39 mg/l in 2018 to 50 mg/l in (Appendix - Table 1).

- The average annual groundwater chloride concentration in the down-gradient recovery well, RW-1, dropped substantially from 523 mg/l in 2018 to 269 mg/l in 2019 (Appendix - Figure 3, Table 1).

- The average annual groundwater chloride concentration in the up-gradient monitor well (MW-3) rose slightly from 274 mg/l in 2018 to 307 mg/l in (Appendix - Figure 3, Table 1). The more or less general rise in average annual groundwater chloride concentrations from a low value of 77 mg/l in 2009 suggests that chloride impacted groundwater water from up-gradient source(s) may increase groundwater chloride concentrations beneath the subject site within the coming years.

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 proposes 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 pipeline, well or facility. The Vacuum SWD System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Please do not hesitate to contact either myself or Rice Operating Company if you have any questions or need additional information.

Sincerely,

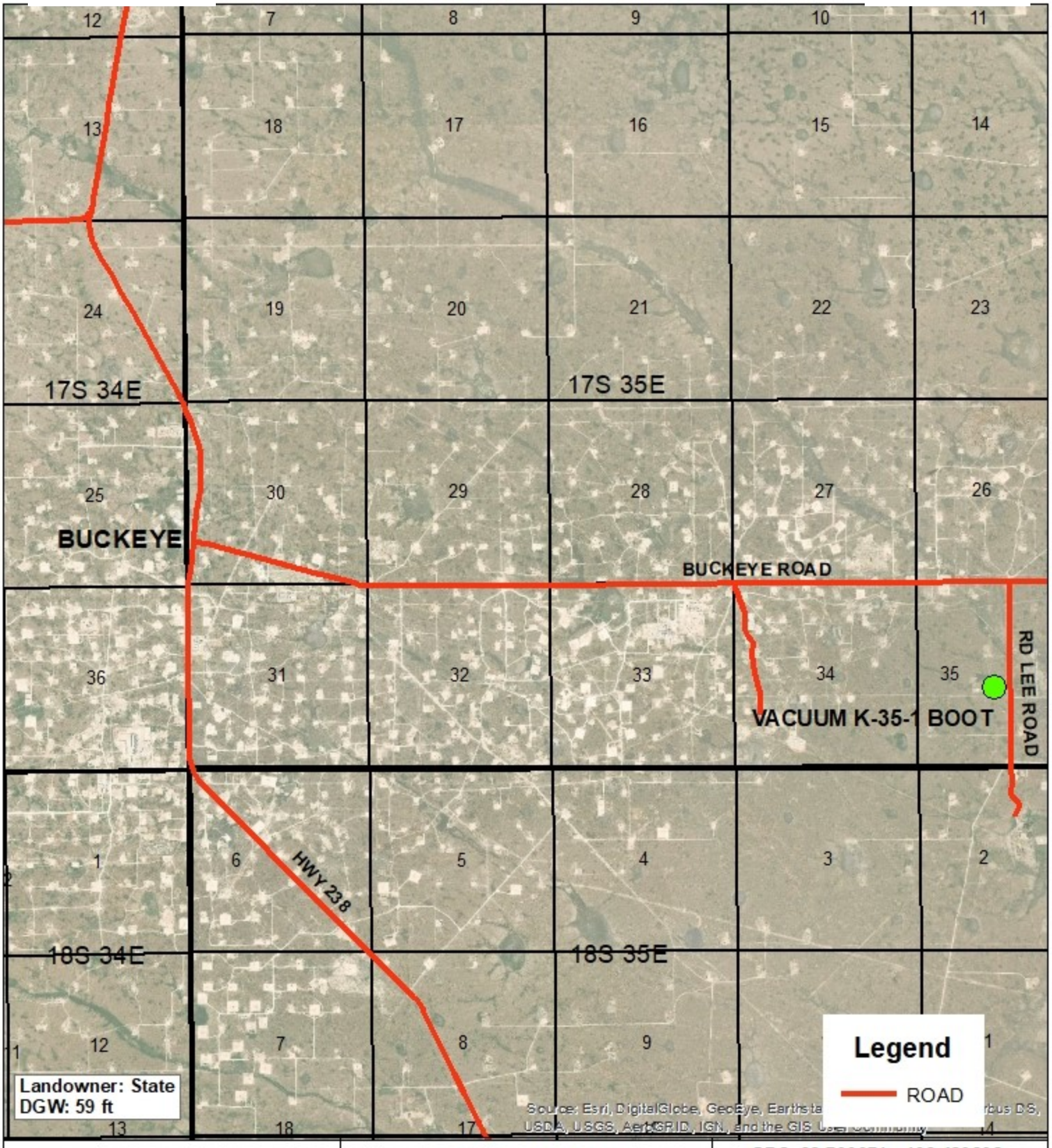
L. Peter Galusky, Jr. P.E.
NM Prof. Engineer No. 22561

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

APPENDIX

Geographic Location

FIGURE 1



RICE OPERATING COMPANY
ROC
SINCE 1955

VACUUM K-35-1 JCT BOOT

1R425-03

UL K SECTION 35
T-17-S R-35-E
LEA COUNTY, NM

GPS: 32.790071 -103.429898
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 0.5 1 Miles

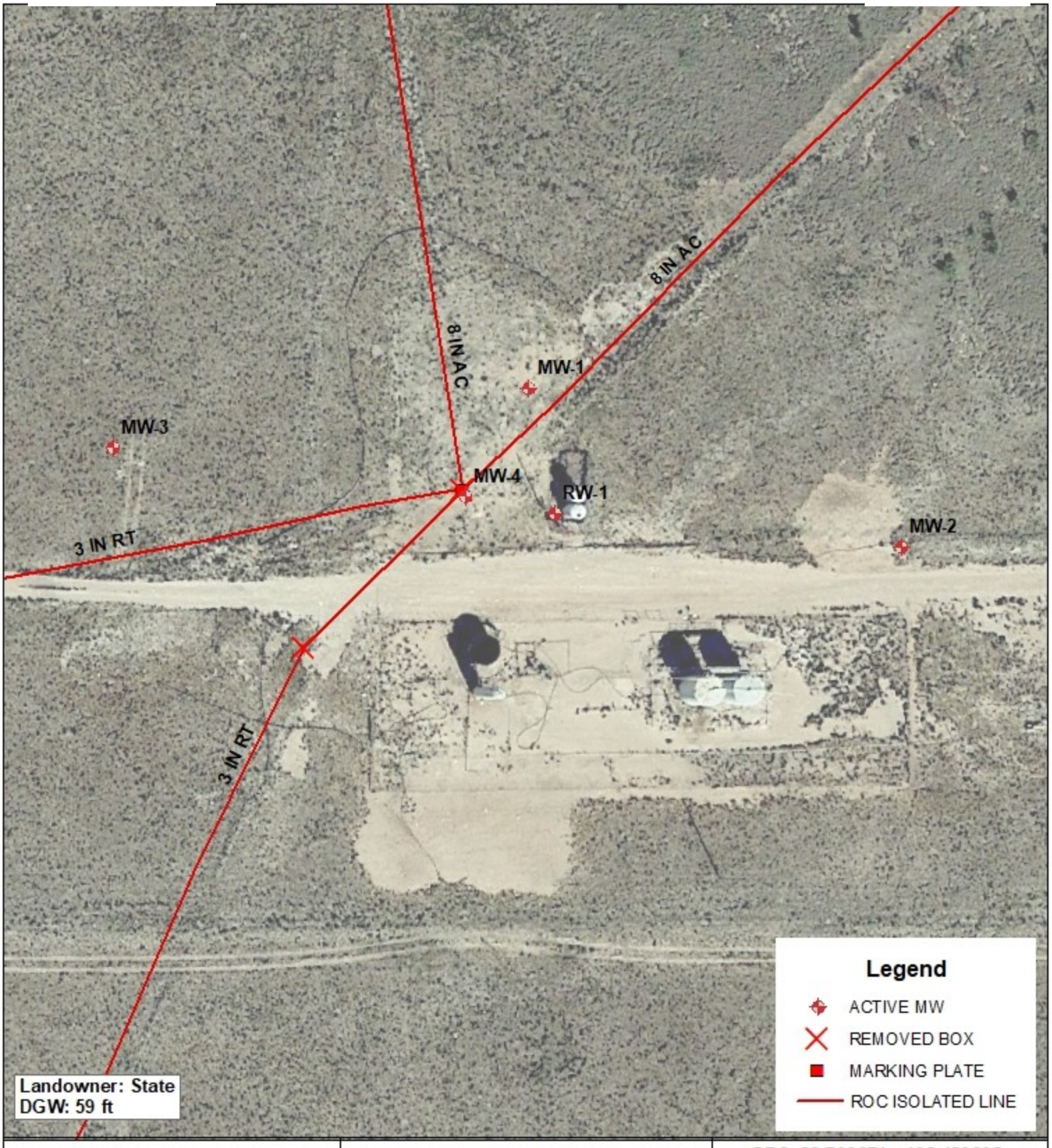
N
W E
S

Drawing date: 2/5/20
Drafted by: T. Grieco

APPENDIX

Site Map

FIGURE 2



RICE OPERATING COMPANY
ROC
SINCE 1955

VACUUM
K-35-1 JCT BOOT

1R425-03

UL K SECTION 35
T-17-S R-35-E
LEA COUNTY, NM

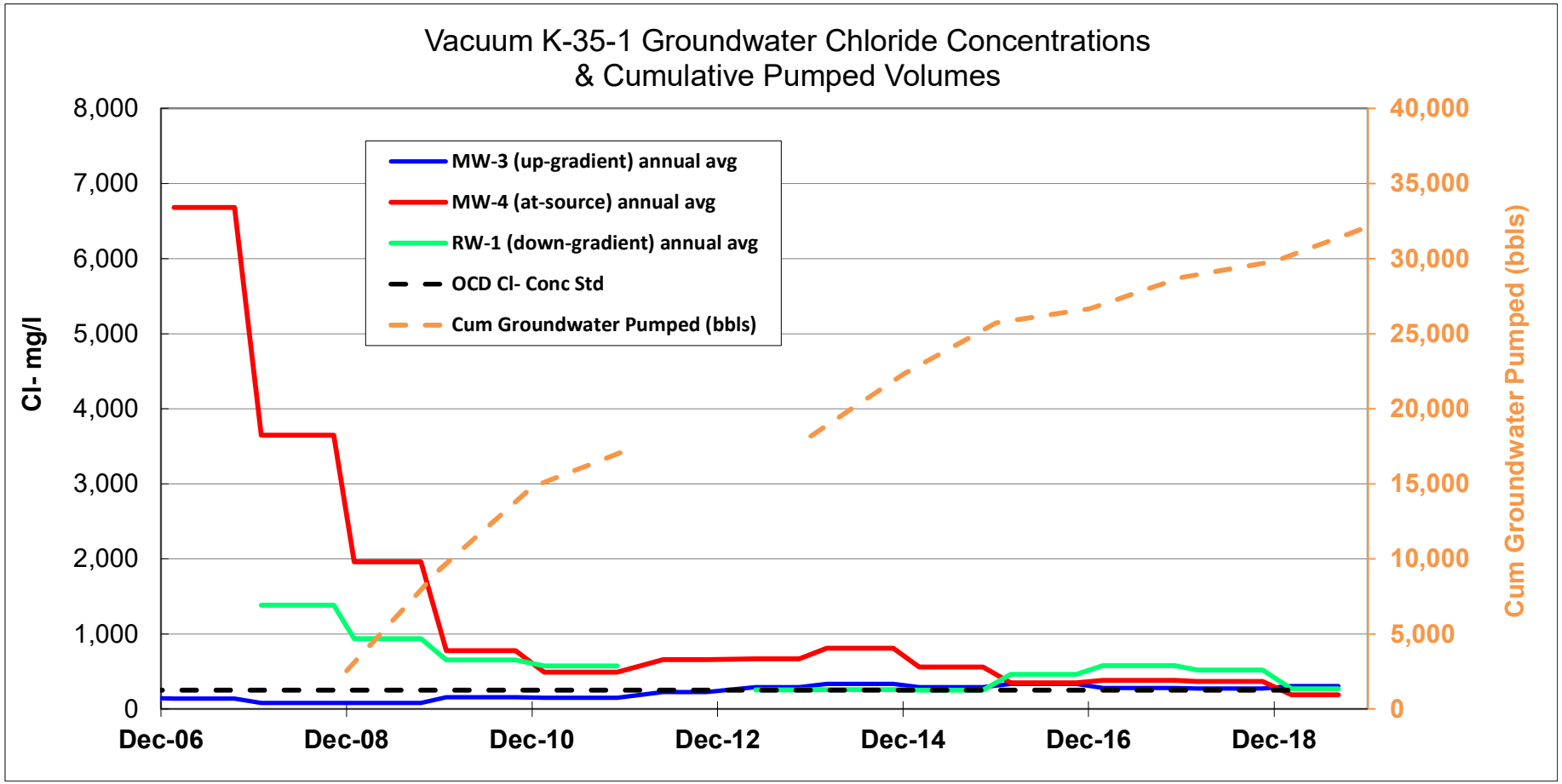
GPS: 32.790071 -103.429898
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 50 100
Feet

N
W E
S

Drawing date: 2/5/20
Drafted by: T. Grieco

APPENDIX FIGURE 3



APPENDIX

TABLE 1

Vacuum K-35-1 Groundwater Data

	Groundwater Chloride Conc (mg/l)									
Date	MW-1 (downgradient well)	MW-1 annual avg	MW-2 (down-gradient well)	MW-2 annual avg	MW-3 (up-gradient)	MW-3 (up-gradient) annual avg	MW-4 (at-source)	MW-4 (at-source) annual avg	RW-1 (down-gradient)	RW-1 (down-gradient) annual avg
6/28/06	508	684	32	29	140	153				
10/19/06	859	684	26	29	165	153				
2/21/07	1,080	1,138	29	27	178	138	6,770	6,680		
5/22/07	923	1,138	25	27	128	138	6,770	6,680		
8/7/07	1,150	1,138	27	27	134	138	6,390	6,680		
10/16/07	1,400	1,138	28	27	112	138	6,790	6,680		
1/30/08	1,300	1,330	80	43	88	81	4,000	3,645		1,383
4/30/08	1,440	1,330	32	43	84	81	4,550	3,645	1,880	1,383
7/30/08	1,360	1,330	32	43	76	81	3,450	3,645	1,070	1,383
11/10/08	1,220	1,330	28	43	76	81	2,580	3,645	1,200	1,383
1/30/09	1,280	1,210	28	28	76	83	1,960	1,960	1,680	935
5/1/09	1,420	1,210	28	28	84	83	2,080	1,960	750	935
8/4/09	940	1,210	28	28	72	83	2,300	1,960	580	935
10/20/09	1,200	1,210	28	28	100	83	1,500	1,960	730	935
1/27/10	1,180	795	32	32	152	157	1,200	778	490	653
4/28/10	460	795	32	32	128	157	460	778	1,220	653
7/29/10	980	795	32	32	184	157	800	778	570	653
10/26/10	560	795	32	32	164	157	650	778	332	653
2/16/11	800	662	32	34	128	152	520	490	750	572
6/1/11	396	662	32	34	148	152	680	490	476	572
8/30/11	352	662	32	34	156	152	380	490	490	572
12/1/11	1,100	662	40	34	176	152	380	490		572
5/29/12			36	36	204	228	700	655		
11/15/12			36	36	252	228	610	655		
5/28/13			36	36	280	294	690	670	212	256
11/15/13	1,040	1,040	36	36	308	294	650	670	300	256
3/4/14	920	733	32	36	312	333	720	808	364	260
6/3/14	800	733	36	36	356	333	870	808	300	260
8/28/14	750	733	44	36	328	333	810	808	292	260
11/21/14	460	733	32	36	336	333	830	808	84	260
3/3/15	499	423	40	44	304	288	640	560	252	251
6/3/15	470	423	60	44	244	288	750	560	240	251
8/22/15	292	423	36	44	284	288	510	560	292	251
11/8/15	432	423	40	44	320	288	340	560	220	251
2/26/16	830	630	48	46	430	337	344	350	570	463
5/21/16	740	630	32	46	284	337	440	350	620	463
9/10/16	520	630	36	46	332	337	280	350	368	463
11/10/16	430	630	68	46	300	337	336	350	292	463
2/22/17	850	968	40	54	280	279	430	385	690	577
5/25/17	960	968	84	54	296	279	256	385	810	577
9/16/17	1,040	968	60	54	320	279	392	385	156	577
12/2/17	1,020	968	32	54	220	279	460	385	652	577
2/28/18	1,300	1,305	44	39	328	274	300	365	680	523
5/15/18	1,300	1,305	36	39	180	274	320	365	820	523
9/8/18	1,120	1,305	36	39	288	274	228	365	112	523
11/13/18	1,500	1,305	40	39	300	274	610	365	480	523
3/6/19	870	748	44	50	324	307	344	188	820	269
5/29/19	900	748	32	50	312	307	128	188	108	269
9/6/19	640	748	48	50	320	307	132	188	108	269
11/16/19	580	748	76	50	272	307	148	188	40	269

CARDINAL Laboratories

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

March 18, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION K-35-1

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

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:	03/06/2019
Reported:	03/18/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: MONITOR WELL #1 (H900962-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**870**	4.00	03/18/2019	ND	100	100	100	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**72.3**	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*	**1840**	5.00	03/14/2019	ND	542	103	527	7.32	

Sample ID: MONITOR WELL #2 (H900962-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**44.0**	4.00	03/18/2019	ND	100	100	100	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**62.6**	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*	**436**	5.00	03/14/2019	ND	542	103	527	7.32	

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:	03/11/2019	Sampling Date:	03/06/2019
Reported:	03/18/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: MONITOR WELL #3 (H900962-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**324**	4.00	03/18/2019	ND	100	100	100	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**115**	25.0	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*	**906**	5.00	03/14/2019	ND	542	103	527	7.32	

Sample ID: MONITOR WELL #4 (H900962-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**128**	4.00	03/18/2019	ND	100	100	100	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**74.8**	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*	**496**	5.00	03/14/2019	ND	542	103	527	7.32	

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:	03/11/2019	Sampling Date:	03/06/2019
Reported:	03/18/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: RECOVERY WELL #1 (H900962-05)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**820**	4.00	03/18/2019	ND	100	100	100	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**73.4**	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*	**1840**	5.00	03/14/2019	ND	542	103	527	7.32	

Cardinal Laboratories *=Accredited Analyte

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 Junction K-35-1
Project Location: T17S-R35E-Sec35 K ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY) H900962	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	1	X								1		3/6	12:50
2	Monitor Well #2	G	1	X								1		3/6	9:05
3	Monitor Well #3	G	1	X								1		3/6	10:15
4	Monitor Well #4	G	1	X								1		3/6	11:35
5	Recovery Well #1	G	1	X								1		3/6	15:00

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	X	
																		X	X	X	
																		X	X	X	

Relinquished by: Rozanne Johnson	Date: 3/11/2019	Time: 13:25	Received by: Tamara Oldaker	Date: 3-11-19	Time: 13:25
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 ✓ / No; Intact — Yes ✓ / No

CHECKED BY: (Initials) T.O.

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 JUNCTION K-35-1

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:	05/29/2019
Reported:	06/06/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: MONITOR WELL #1 (H901928-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**900**	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*	**69.0**	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*	**2270**	5.00	06/06/2019	ND	520	98.7	527	2.05	

Sample ID: MONITOR WELL #2 (H901928-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**32.0**	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*	**63.5**	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*	**453**	5.00	06/06/2019	ND	520	98.7	527	2.05	

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:	06/03/2019	Sampling Date:	05/29/2019
Reported:	06/06/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: MONITOR WELL #3 (H901928-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**312**	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*	**114**	100	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*	**889**	5.00	06/06/2019	ND	520	98.7	527	2.05	

Sample ID: MONITOR WELL #4 (H901928-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**132**	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*	**72.4**	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*	**599**	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:	05/29/2019
Reported:	06/06/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: RECOVERY WELL #1 (H901928-05)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**108**	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*	**56.4**	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*	**465**	5.00	06/06/2019	ND	520	98.7	527	2.05	

Cardinal Laboratories *=Accredited Analyte

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 Junction K-35-1
Project Location: T17S-R35E-Sec35 K ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H901928 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	1	X									1		5/29	14:00
2	Monitor Well #2	G	1	X									1		5/29	9:15
3	Monitor Well #3	G	1	X									1		5/29	10:40
4	Monitor Well #4	G	1	X									1		5/29	12:40
5	Recovery Well #1	G	1	X									1		5/29	14:40

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	X	
																		X	X	X	
																		X	X	X	

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

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

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

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

CHECKED BY: (Initials) JO

REMARKS:

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

CARDINAL Laboratories

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

September 17, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION K-35-1

Enclosed are the results of analyses for samples received by the laboratory on 09/11/19 15:50.

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:	09/11/2019	Sampling Date:	09/06/2019
Reported:	09/17/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: MONITOR WELL #1 (H903143-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**640**	4.00	09/13/2019	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*	**73.5**	25.0	09/13/2019	ND	21.2	106	20.0	0.950	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1660**	5.00	09/13/2019	ND	539	102	527	9.17	

Sample ID: MONITOR WELL #2 (H903143-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**48.0**	4.00	09/13/2019	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*	**53.1**	10.0	09/13/2019	ND	21.2	106	20.0	0.950	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**504**	5.00	09/13/2019	ND	539	102	527	9.17	

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:	09/11/2019	Sampling Date:	09/06/2019
Reported:	09/17/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: MONITOR WELL #3 (H903143-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**320**	4.00	09/13/2019	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*	**93.4**	25.0	09/13/2019	ND	21.2	106	20.0	0.950	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**942**	5.00	09/13/2019	ND	539	102	527	9.17	

Sample ID: MONITOR WELL #4 (H903143-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**148**	4.00	09/13/2019	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*	**68.3**	10.0	09/13/2019	ND	21.2	106	20.0	0.950	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**572**	5.00	09/13/2019	ND	539	102	527	9.17	

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:	09/11/2019	Sampling Date:	09/06/2019
Reported:	09/17/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: RECOVERY WELL #1 (H903143-05)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**108**	4.00	09/13/2019	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*	**53.2**	10.0	09/13/2019	ND	21.2	106	20.0	0.950	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**490**	5.00	09/13/2019	ND	539	102	527	9.17	

Cardinal Laboratories *=Accredited Analyte

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 Junction K-35-1
Project Location: T17S-R35E-Sec35 K ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H903143

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	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	Monitor Well #1	G	1	X									1		9/6	13:30																	X	X	X	
2	Monitor Well #2	G	1	X									1		9/6	9:45																	X	X	X	
3	Monitor Well #3	G	1	X									1		9/6	11:00																	X	X	X	
4	Monitor Well #4	G	1	X									1		9/6	12:15																	X	X	X	
5	Recovery Well #1	G	1	X									1		9/6	14:00																	X	X	X	

ANALYSIS REQUEST

(Circle or Specify Method No.)

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Rozanne Johnson	9/11/2019	15:50	Tamara Oldaker	9-11-19	15:50
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)	Sample Condition				CHECKED BY:
		Cool		Intact	
Sampler - UPS - Bus - Other:	Yes	✓	Yes	✓	(Initials) TQ
	No		No		

CARDINAL Laboratories

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

December 02, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: VACUUM JUNCTION K-35-1

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:	11/16/2019
Reported:	12/02/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: MONITOR WELL #1 (H903952-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**580**	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*	**65.8**	25.0	11/27/2019	ND	18.3	91.6	20.0	18.5	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1230**	5.00	11/26/2019	ND	523	99.2	527	2.39	

Sample ID: MONITOR WELL #2 (H903952-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**76.0**	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*	**70.6**	25.0	11/27/2019	ND	18.3	91.6	20.0	18.5	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**485**	5.00	11/26/2019	ND	523	99.2	527	2.39	

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:	11/21/2019	Sampling Date:	11/16/2019
Reported:	12/02/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: MONITOR WELL #3 (H903952-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**272**	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*	**162**	25.0	11/27/2019	ND	18.3	91.6	20.0	18.5	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**833**	5.00	11/26/2019	ND	523	99.2	527	2.39	

Sample ID: MONITOR WELL #4 (H903952-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**140**	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*	**73.5**	25.0	11/27/2019	ND	18.3	91.6	20.0	18.5	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**564**	5.00	11/26/2019	ND	523	99.2	527	2.39	

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:	11/21/2019	Sampling Date:	11/16/2019
Reported:	12/02/2019	Sampling Type:	Water
Project Name:	VACUUM JUNCTION K-35-1	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T17S-R35E-SEC35 K LEA COUNTY, NM		

Sample ID: RECOVERY WELL #1 (H903952-05)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**40.0**	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*	**155**	25.0	11/27/2019	ND	18.3	91.6	20.0	18.5	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**428**	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

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

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 Junction K-35-1
Project Location: T17S-R35E-Sec35 K ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H903952

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	1	X									1		11/16	13:20
2	Monitor Well #2	G	1	X									1		11/16	9:20
3	Monitor Well #3	G	1	X									1		11/16	10:50
4	Monitor Well #4	G	1	X									1		11/16	12:05
5	Recovery Well #1	G	1	X									1		11/16	16:05

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	X	
																		X	X	X	
																		X	X	X	

Relinquished by: Rozanne Johnson Date: 11/21/2019 Time: 12:55
Received by: Tamara Oldaker 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 — Yes [✓] No [ ]; Intact — Yes [✓] No [ ]

CHECKED BY: (Initials) TO