RICE *Operating Company*
112 West Taylor • Hobbs, New Mexico 88240
Phone: (575) 393-9174 • Fax: (575) 397-1471

April 1, 2020

Bradford Billings
Environmental Bureau, Oil Conservation Division
New Mexico Energy, Minerals, & Natural Resources Department
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: **2019 Annual Groundwater Report**
Rice Operating Company – BD SWD System
BD F-29 (1R426-16) and F-29-1 (1R426-15): UL/F, Sec. 29, T21S, R37E

Mr. Billings:

ROC is the service provider (agent) for the BD 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.

Background and Previous Work

The BD F-29 site is located 25 ft south from the BD F-29-1 site. These sites are located approximately 1.5 miles northwest of Eunice, New Mexico at UL/F, Sec. 29, T21S, R37E as shown on the Geographical Location Map. Groundwater sampling at the site indicated the depth to groundwater is approximately 99 feet below ground surface (bgs).

BD F-29 Backhoe Delineation
In 2003, ROC initiated work on the former BD F-29 junction box. The site was delineated using a backhoe to form a 25x10x14-ft deep excavation and soil samples were screened at regular intervals for both hydrocarbon and chloride. From the excavation, the four-wall composite and the bottom composite were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite and the bottom composite resulted in elevated chloride concentrations. TPH concentrations were low and BTEX concentrations were below detectable limits. The site was backfilled, the area was contoured to the surrounding area, and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on March 26th, 2003 and a junction box disclosure report was submitted to NMOCD with all the 2003 junction box closures and disclosures.

BD F-29-1 Backhoe Delineation
In 2003, ROC initiated work on the former BD F-29-1 junction. The site was delineated using a backhoe to form a 20x10x6-ft deep excavation and soil samples were screened at regular intervals for both hydrocarbon and chloride. From the excavation, the bottom composite was

taken to a commercial laboratory for analysis. Laboratory testing on the bottom composite showed a chloride laboratory reading of 1,060 mg/kg, a GRO reading of non-detect and a DRO reading of 26.6 mg/kg. BTEX readings returned a result of non-detect. The site was backfilled, the area was contoured to the surrounding area, and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on March 26th, 2003 and a junction box closure report was submitted to NMOCD with all the 2003 junction box closures and disclosures.

An Investigation and Characterization Plan (ICP) was submitted to NMOCD September 30th, 2013. According to the ICP, a total of 18 soil bores were drilled at the two sites. As the bores were advanced, soil samples were taken at regular intervals and field tested for chloride and hydrocarbon. Representative samples from each bore were taken to a commercial laboratory for analysis. The interior bores (SB 1-9, 11 and 14-16) located close to the former boxes, showed evidence of elevated chlorides throughout each bore. Although the laboratory chloride readings decrease with depth in each bore, the bottom samples at 95 ft bgs are still above 250 mg/kg. The most outer bores (SB 12, 13, 17 and SB-18) showed laboratory chloride readings that decrease to below 250 mg/kg before reaching the capillary fringe. GRO and DRO readings were non-detect in all bores at all depths.

According to a Corrective Action Plan (CAP) approved by the NMOCD on October 30th, 2013, ROC installed a 20-mil reinforced liner measuring 247x106-ft at a depth of 4.5 ft bgs. The liner extended 5 ft beyond the furthest soil bores and will provide a barrier that will inhibit the downward migration of chlorides to the groundwater. The soils placed above the liner had a laboratory chloride reading of 240 mg/kg and 320 mg/kg, and field PID readings of 0.4 ppm and 1.2 ppm. Upon completion of backfilling, the site was seeded with a native vegetative mix and soil amendments. A CAP Report and Soil Closure Request summarizing this work was submitted to NMOCD on July 23rd, 2014, and NMOCD granted Soil Closure on September 18th, 2014.

On November 13th, 2018, a near-source monitor well (MW-1) was installed approximately 70 ft southeast of the former junction boxes. On December 10, 2018, an up-gradient well (MW-2) was installed approximately 133 ft northwest and a down-gradient well (MW-3) was installed approximately 170 ft southeast of the former junction boxes. These wells were developed and have been sampled quarterly. The most recent sampling event resulted in a chloride concentration of 400 mg/L in MW-1, 116 mg/L in MW-2, and 264 mg/L in MW-3. BTEX concentrations have remained below detectable limits since the wells were installed.

Given that BTEX concentrations have been below detectable limits since installation, ROC requests to suspend BTEX sampling in all three wells (MW-1, MW-2 and MW-3). Further, due to the current climate, and in the interest of safety, ROC proposes to reduce groundwater monitoring from quarterly to semi-annually beginning this year. This request is only temporary and regularly scheduled groundwater monitoring will commence as soon as possible.

Attached is the Appendix, which contains:

1. A Geographical Location Map.
2. A map showing well locations.

3. Monitoring well installation logs and photos.
4. A table presenting all laboratory results and depth to groundwater for each well at the site, and a graph showing recent laboratory results.
5. The laboratory analytical results for 2019.

Rice Operating Company appreciates the opportunity to work with you on this project. Please contact me at (575) 393-9174 or Edward Hansen at (505) 920-4965 if you have any questions or wish to further discuss this site. Thank you for your time and consideration.

Sincerely,

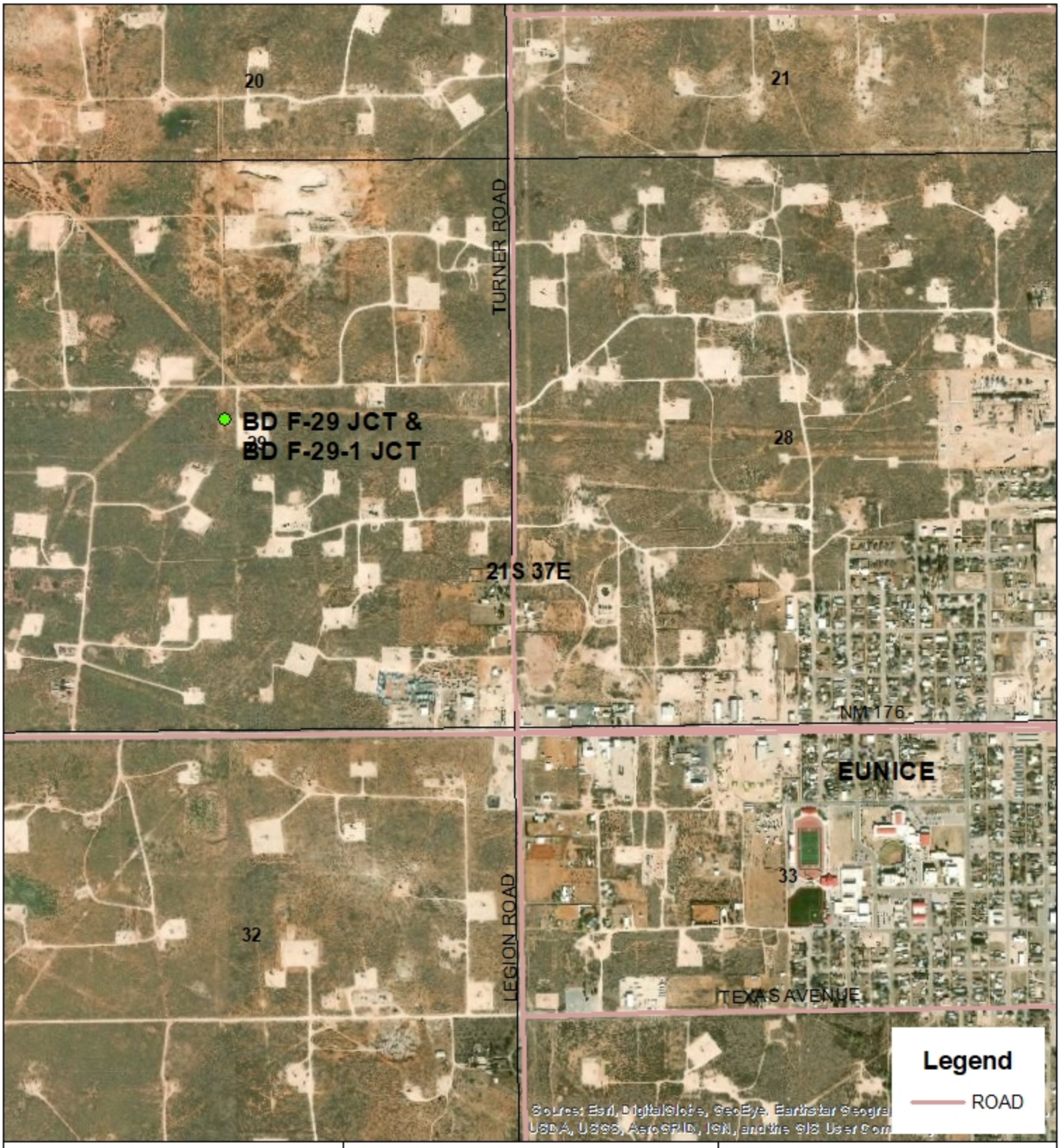
Katie Davis

Katie Davis
Environmental Manager
RICE Operating Company (ROC)

Cc – Edward J. Hansen (ROC)

appendix

Geographical Location Map



RICE OPERATING COMPANY
ROC
SINCE 1955

BD F-29 JCT

1R426-16

BD F-29-1 JCT

1R426-15

UL F SECTION 29
T-21-S R-37-E
LEA COUNTY, NM

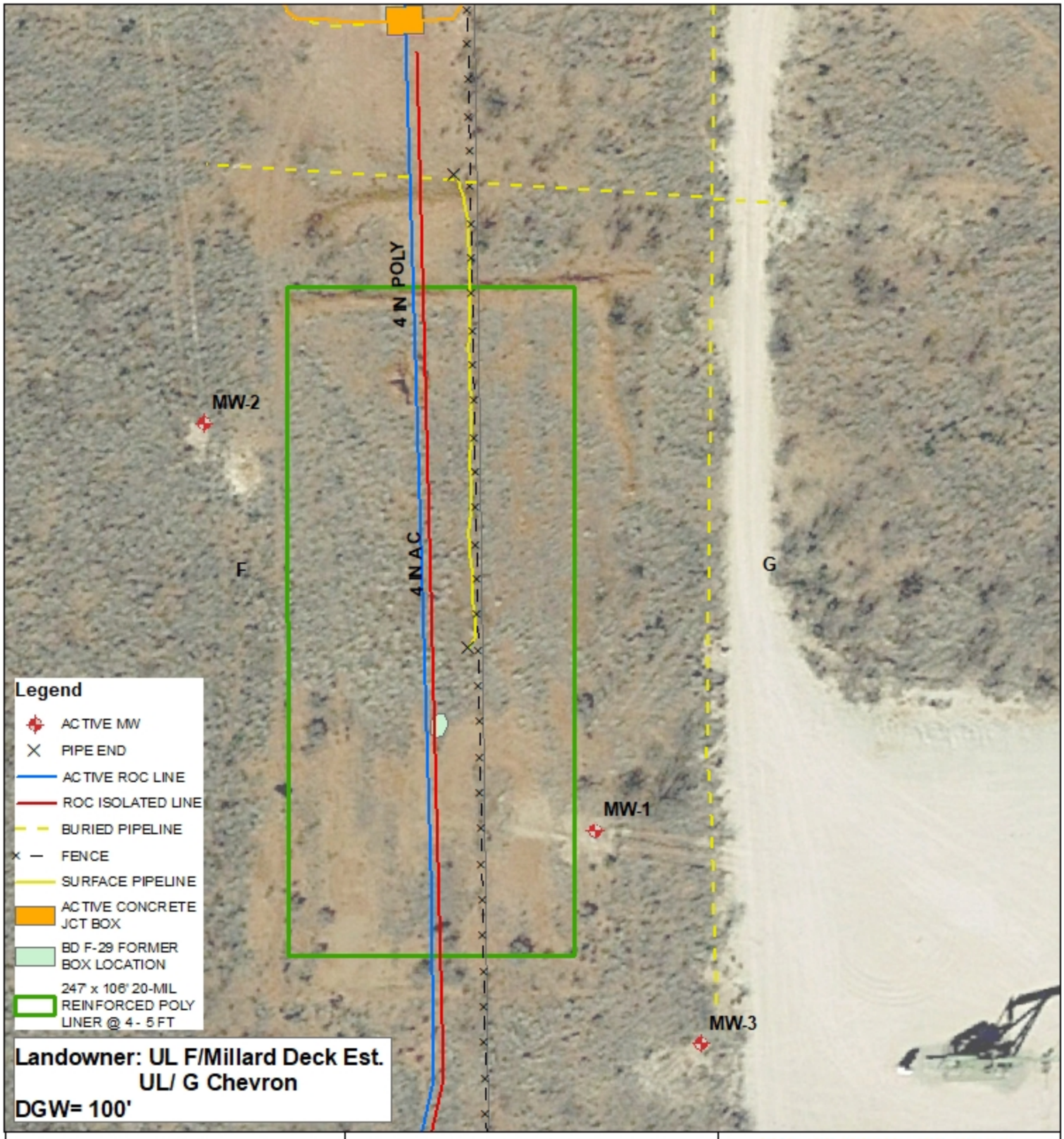
GPS:
F-29 JCT: 32.450545 -103.185153
F-29-1 JCT: 32.450619 -103.185157
NAD 83 STATE PLANE PROJ.
NM EAST ZONE

0 1,000 2,000
Feet

N
W E
S

Drawing date: 1/28/20
Drafted by: T. Grieco

Monitor Well Location



RICE OPERATING COMPANY
ROC
SINCE 1955

BD
F-29 & F-29-1 JCT

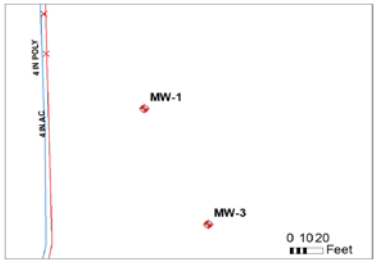
1R426-16 & 1R426-15
UL F & G SECTION 29
T-21-S R-37-E
LEA COUNTY, NM

GPS: 32.450619 -103.185159
NAD83 STATE PLANE PROJECTION
NEW MEXICO EAST ZONE

0 25 50
Feet

Drawing date: 6/25/19
Drafted by: T. Grieco

N
W E
S

Logger:	Nick Kopiasz		TASMAN GEOSCIENCES
Driller:	HCI Drilling		**Project Name:** BD F-29/F-29-1 **Well ID:** MW-1
Drilling Method:	Air rotary		
Start Date:	11/13/2018		**Project Consultant:** Tasman
End Date:	11/16/2018		

Comments: Located approximately 70 ft southeast of the former junction boxes. Soil samples were collected from drill cuttings at specified intervals.

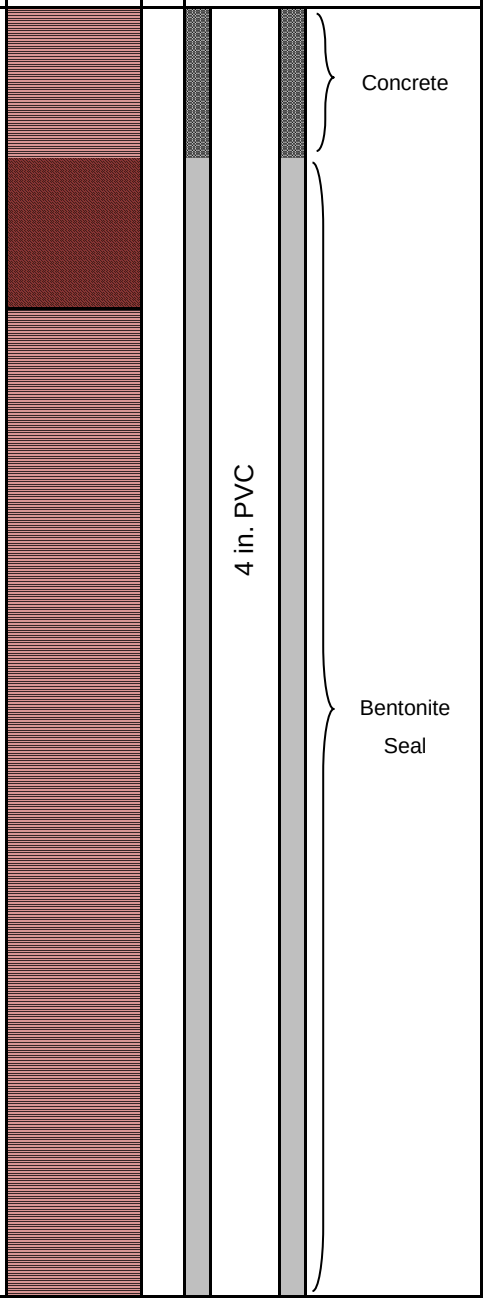
DRAFTED BY: N.Kopiasz

TD = 116 ft GW = 99 ft

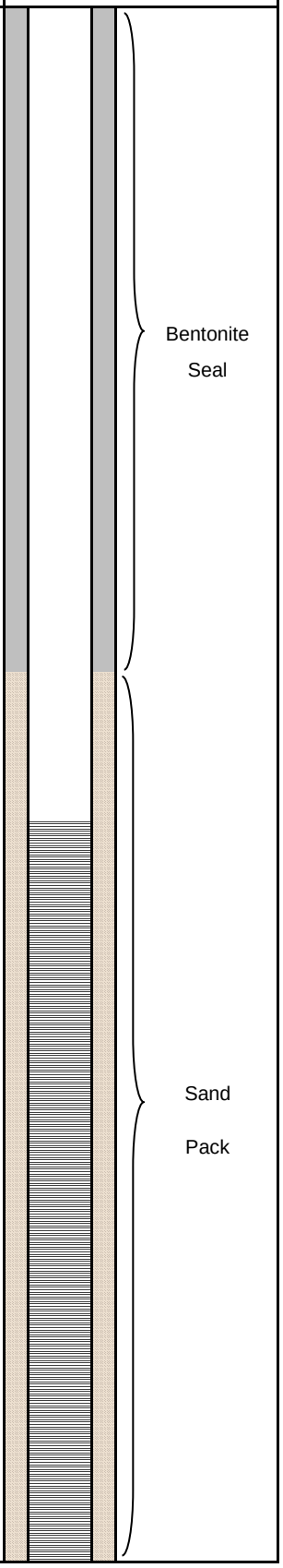
Location: Unit F, Section 29, T21S, R37E

Lat: 32.450441 **County:** Lea
Long: -103.184960 (NAD83) **State:** NM

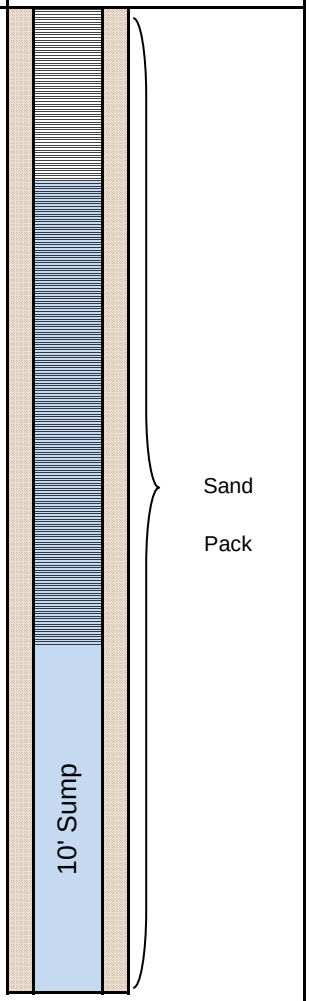
Depth (feet)	Chloride field tests	LAB	PID	Description
				SM-dark red, silty sand
SS				
				SC-dark red, clayey silt
5 ft				
				SM-tan, silty sand, caliche
10 ft				
				SM-reddish tan, silty sand, occasional caliche
15 ft				
				SM-reddish tan, silty sand
20 ft				
				SM-tan, silty sand
25 ft				
				SM-tan, silty sand, caliche
30 ft				
				SM-Same As Above (SAA)
35 ft				



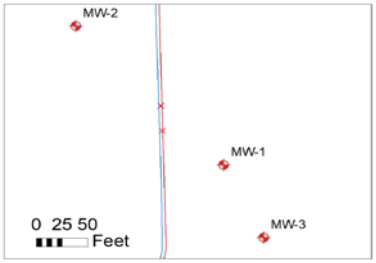
Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				SM-SAA		
40 ft						
				SM-SAA		
45 ft						
				SM-tan, silty sand		
50 ft						
				SM-SAA		
55 ft						
				SM-SAA		
60 ft						
				SM-tan, silty sand, sandstone		
65 ft						
				SM-SAA		
70 ft						
				SM-SAA		
75 ft						
				SM-SAA		
80 ft						
				SM-reddish tan, silty sand, sandstone, slight moisture		
85 ft						



Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				SM-reddish tan, silty sand, sandstone, moist		
90 ft						
				SM-reddish tan, silty sand, moist		
95 ft						
				SM-SAA		
100 ft						
				SM-SAA		
105 ft						
				SM-SAA		
110 ft						
				SM-SAA		
115 ft						



Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	Air Rotary
Start Date:	12/10/2018
End Date:	12/10/2018



TASMAN GEOSCIENCES

Project Name: BD F-29/F-29-1 **Well ID:** MW-2

Project Consultant: Tasman

Comments: Located approximately 133 ft northwest of the former junction boxes. Soil samples were collected from drill cuttings at specified intervals.

DRAFTED BY: N.Kopiasz

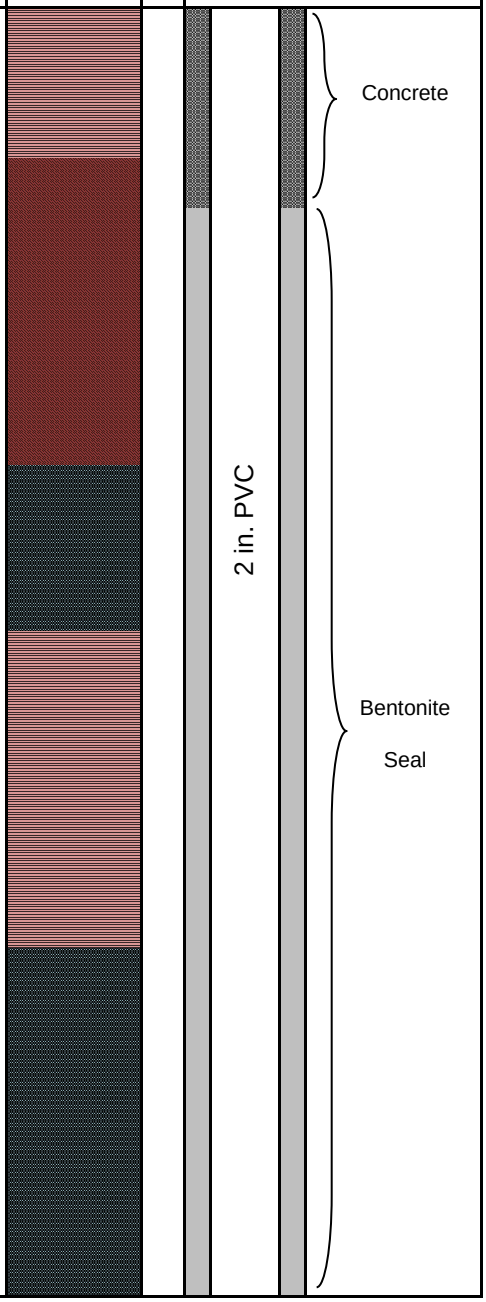
TD = 102 ft GW = 99 ft

Location: Unit F, Section 29, T21S, R37E

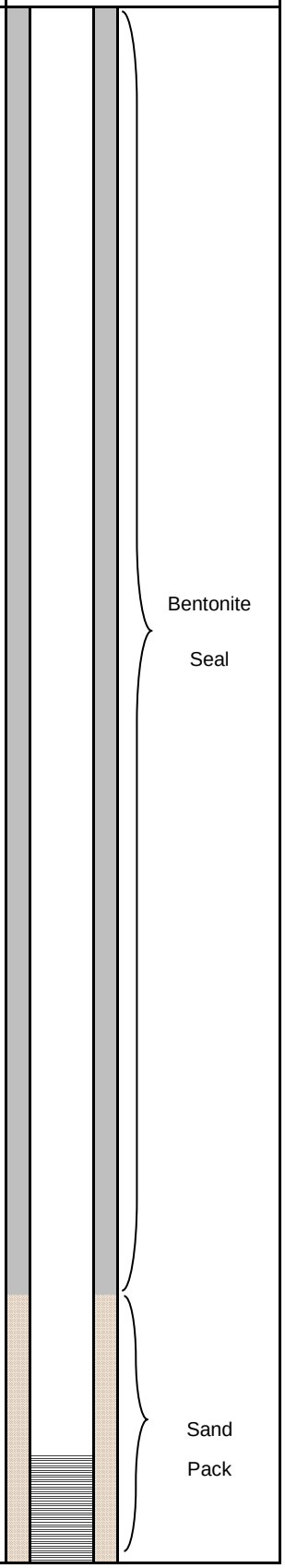
Lat: 32.450860 **County**: Lea

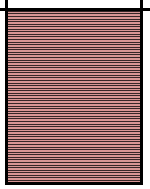
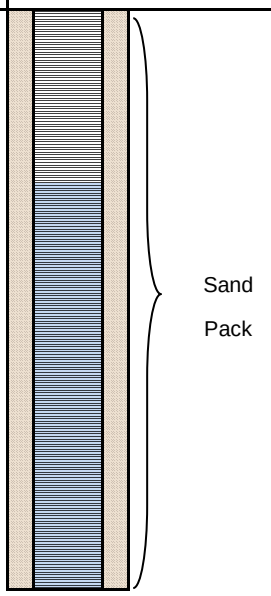
Long: -103.185424 (NAD83) **State**: NM

Depth (feet)	Chloride field tests	LAB	PID	Description
				SM-reddish brown, silty sand
SS				
				SC-reddish brown, clayey silt
5 ft				
				SC-Same As Above (SAA)
10 ft				
				GM-light tan, gravelly silt, caliche
15 ft				
				SM-light tan, silty sand, occasional caliche
20 ft				
				SM-SAA
25 ft				
				GM-light tan, gravelly silt, caliche
30 ft				
				GM-SAA
35 ft				

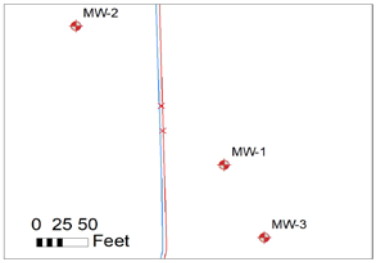


Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				SM-light tan, silty sand, occasional caliche		
40 ft						
				SM-SAA		
45 ft						
				SM-SAA		
50 ft						
				SM-tan, silty sand, occasional caliche		
55 ft						
				SM-SAA		
60 ft						
				GM-tan, gravelly silt, caliche		
65 ft						
				SM-tan, silty sand, occasional caliche		
70 ft						
				SM-reddish tan, silty sand, occasional caliche and sandstone		
75 ft						
				SM-SAA		
80 ft						
				SM-SAA		
85 ft						



Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				SM-tan, silty sand		
90 ft						
				Not Sampled (NS)		
95 ft						
				NS		
100 ft						
				NS		
105 ft						

Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	Air Rotary
Start Date:	12/10/2018
End Date:	12/11/2018



TASMAN GEOSCIENCES

Project Name: BD F-29/F-29-1 **Well ID:** MW-3

Project Consultant: Tasman

Comments: Located approximately 170 ft southeast of the former junction boxes. Soil samples were collected from drill cuttings at specified intervals.

DRAFTED BY: N.Kopiasz

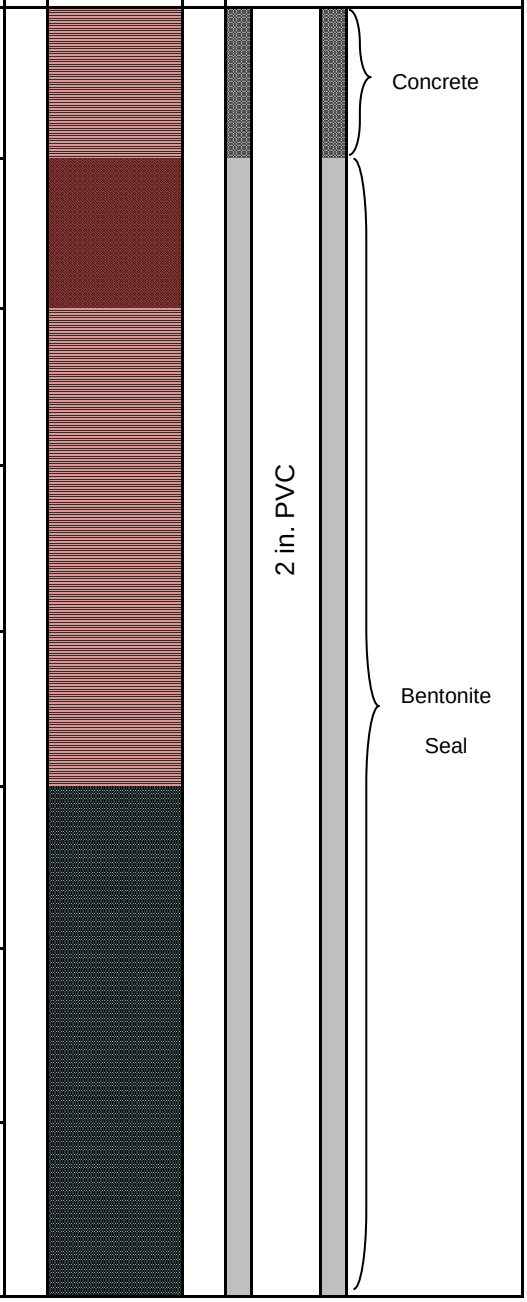
TD = 108 ft GW = 99 ft

Location: Unit G, Section 29, T21S, R37E

Lat: 32.450223 **County:** Lea

Long: -103.184836 (NAD83) **State:** NM

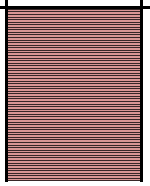
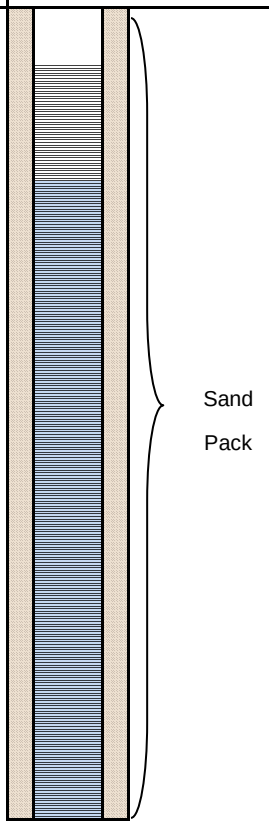
Depth (feet)	Chloride field tests	LAB	PID	Description
				SM-dark red, silty sand
SS				
				SC-dark red, clayey silt
5 ft				
				SM-tan , silty sand
10 ft				
				SM-Same As Above (SAA)
15 ft				
				SM-tan, silty sand, occasional caliche
20 ft				
				GM-light tan, gravelly silt, caliche
25 ft				
				GM-SAA
30 ft				
				GM-SAA
35 ft				



Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				SM-light tan, silty sand		
40 ft						
				SM-tan, silty sand, occasional sandstone		
45 ft						
				SM-reddish tan, silty sand		
50 ft						
				SM-tan, silty sand		
55 ft						
				SM-tan, silty sand, occasional caliche		
60 ft						
				GM-tan , gravelly silt, caliche		
65 ft						
				SM-reddish tan, silty sand, occasional caliche		
70 ft						
				SM-SAA		
75 ft						
				SM-SAA		
80 ft						
				SM-reddish tan, silty sand, occasional sandstone		
85 ft						

Bentonite Seal

Sand Pack

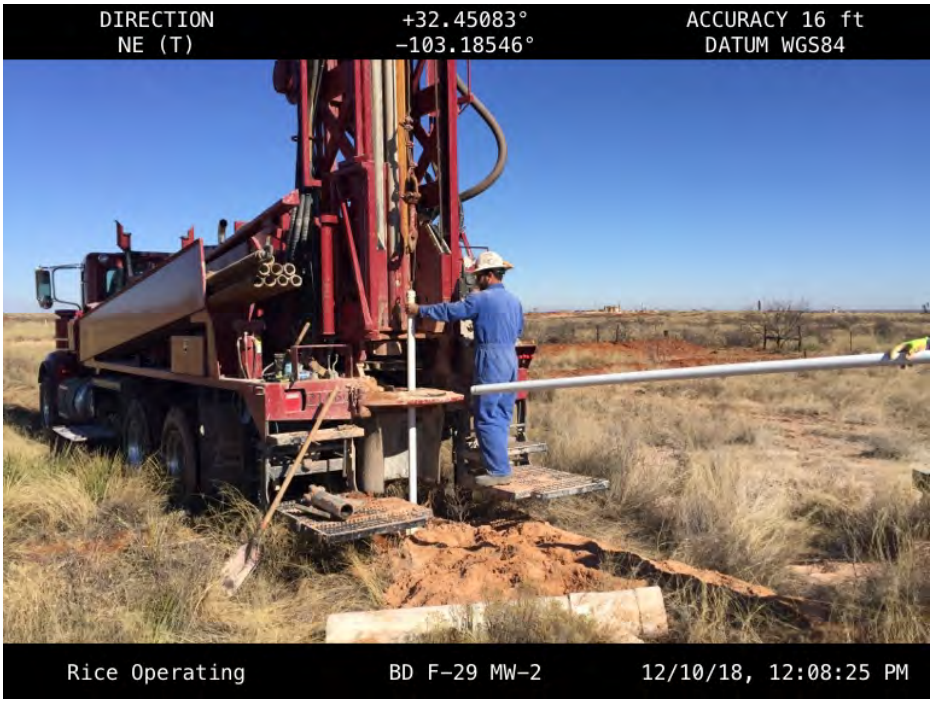
Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				SM-tan, silty sand		
90 ft						
				Not Sampled (NS)		
95 ft						
				NS		
100 ft						
				NS		
105 ft						
				NS		
110 ft						

Rice Operating Company
BD F-29/F-29-1
Drilling Photo Log

Rice Operating Company
BD F-29/F-29-1
Drilling Photo Log

MW-2 overview

Rice Operating Company
BD F-29/F-29-1
Drilling Photo Log



MW-2 setting well

MW-3 overview

Rice Operating Company
BD F-29/F-29-1
Drilling Photo Log

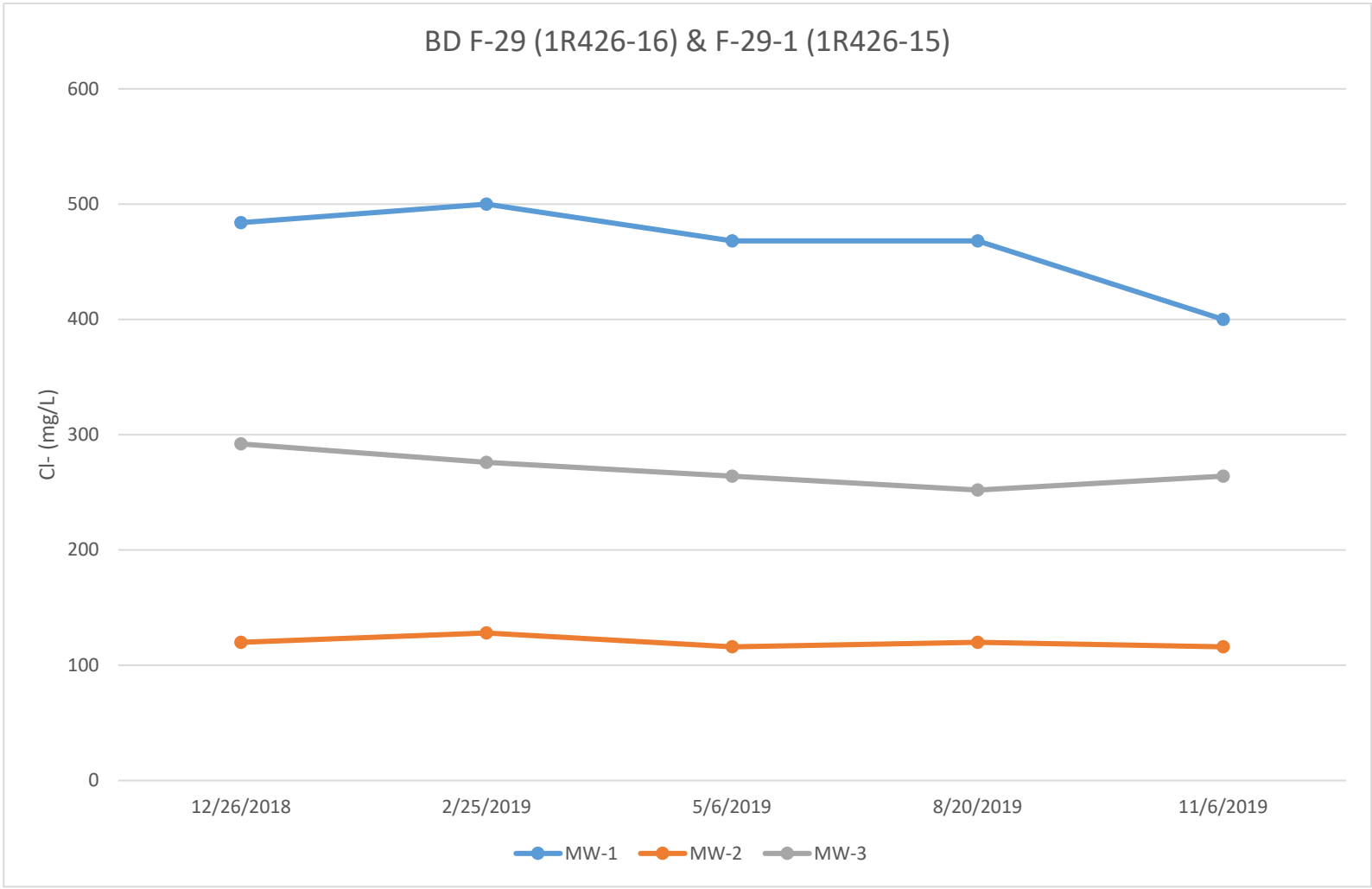
MW-3 completed

ROC - BD F-29 (1R426-16) & F-29-1 (1R426-15)
Unit Letter F, Section 29, T21S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	99.48	116.2	11	35	12/26/2018	484	1,300	<0.001	<0.001	<0.001	<0.003	278	Clear No odor
1	99.45	116.2	11	35	2/25/2019	500	1,230	<0.001	<0.001	<0.001	<0.003	251	Clear No odor
1	99.44	116.2	11	35	5/6/2019	468	976	<0.001	<0.001	<0.001	<0.003	238	Clear No odor
1	99.42	116.2	11	35	8/20/2019	468	1,300	<0.001	<0.001	<0.001	<0.003	211	Clear No odor
1	99.44	116.2	11	35	11/6/2019	400	1,200	<0.001	<0.001	<0.001	<0.003	208	Clear No odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	98.22	103	0.7	3	12/26/2018	120	550	<0.001	<0.001	<0.001	<0.003	153	Clear No odor
2	98.2	103	0.7	3	2/25/2019	128	470	<0.001	<0.001	<0.001	<0.003	134	Clear No odor
2	98.18	103	0.7	3	5/6/2019	116	616	<0.001	<0.001	<0.001	<0.003	116	Clear No odor
2	98.13	103	0.7	3	8/20/2019	120	570	<0.001	<0.001	<0.001	<0.003	119	Clear No odor
2	98.19	103	0.7	3	11/6/2019	116	596	<0.001	<0.001	<0.001	<0.003	121	Clear No odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	99.88	108.8	1.4	5	12/26/2018	292	978	<0.001	<0.001	<0.001	<0.003	298	Clear No odor
3	99.87	108.8	1.4	5	2/25/2019	276	991	<0.001	<0.001	<0.001	<0.003	245	Clear No odor
3	99.88	108.8	1.4	5	5/6/2019	264	936	<0.001	<0.001	<0.001	<0.003	240	Clear No odor
3	99.9	108.8	1.4	5	8/20/2019	252	964	<0.001	<0.001	<0.001	<0.003	227	Clear No odor
3	100.03	108.8	1.4	3	11/6/2019	264	871	<0.001	<0.001	<0.001	<0.003	238	Clear No odor


BD F-29 (1R426-16) & F-29-1 (1R426-15)
600
500
400
300
200
100
0
Cl- (mg/L)
12/26/2018
2/25/2019
5/6/2019
8/20/2019
11/6/2019
MW-1
MW-2
MW-3

CARDINAL Laboratories

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

March 08, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION F-29 & F-29-1

Enclosed are the results of analyses for samples received by the laboratory on 02/27/19 13:41.

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:	02/27/2019	Sampling Date:	02/25/2019
Reported:	03/08/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #1 (H900743-01)

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	03/05/2019	ND	0.021	106	0.0200	0.538	
Toluene*	<0.001	0.001	03/05/2019	ND	0.019	97.0	0.0200	0.862	
Ethylbenzene*	<0.001	0.001	03/05/2019	ND	0.020	102	0.0200	1.06	
Total Xylenes*	<0.003	0.003	03/05/2019	ND	0.064	106	0.0600	1.06	
Total BTEX	<0.006	0.006	03/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.6 %* *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*	**500**	4.00	02/28/2019	ND	100	100	100	3.92	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**251**	50.0	02/28/2019	ND	22.9	114	20.0	0.263	

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	03/01/2019	ND	528	100	527	1.80	

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:	02/27/2019	Sampling Date:	02/25/2019
Reported:	03/08/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #2 (H900743-02)

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	03/05/2019	ND	0.021	106	0.0200	0.538	
Toluene*	<0.001	0.001	03/05/2019	ND	0.019	97.0	0.0200	0.862	
Ethylbenzene*	<0.001	0.001	03/05/2019	ND	0.020	102	0.0200	1.06	
Total Xylenes*	<0.003	0.003	03/05/2019	ND	0.064	106	0.0600	1.06	
Total BTEX	<0.006	0.006	03/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.6 %* *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*	**128**	4.00	02/28/2019	ND	100	100	100	3.92	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**134**	25.0	02/28/2019	ND	22.9	114	20.0	0.263	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**470**	5.00	03/04/2019	ND	514	97.5	527	0.847	

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:	02/27/2019	Sampling Date:	02/25/2019
Reported:	03/08/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #3 (H900743-03)

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	03/05/2019	ND	0.021	106	0.0200	0.538	
Toluene*	<0.001	0.001	03/05/2019	ND	0.019	97.0	0.0200	0.862	
Ethylbenzene*	<0.001	0.001	03/05/2019	ND	0.020	102	0.0200	1.06	
Total Xylenes*	<0.003	0.003	03/05/2019	ND	0.064	106	0.0600	1.06	
Total BTEX	<0.006	0.006	03/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.0 %* *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*	**276**	4.00	02/28/2019	ND	100	100	100	3.92	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**245**	50.0	02/28/2019	ND	22.9	114	20.0	0.263	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**991**	5.00	03/04/2019	ND	514	97.5	527	0.847	

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

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: BD Junction F29 & F-29-1
Project Location: T21S R37E Sec29 F~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY H900743)	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	3	X				2				1		2/25	15:15		X																	X	X	X	
2	Monitor Well #2	G	3	X				2				1		2/25	10:05		X																	X	X	X	
3	Monitor Well #3	G	3	X				2				1		2/25	12:10		X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 2/27/2019	Time: 13:40	Received by:
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff) Jodi Henson 2/22/19 13:41
Delivered By: (Circle One) Sampler - UPS - Bus - Other: #97	Sample Condition: Cool: Yes ✓ / No; Intact: Yes ✓ / No		CHECKED BY: (Initials)

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

May 21, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION F-29 & F-29-1

Enclosed are the results of analyses for samples received by the laboratory on 05/09/19 14:16.

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:	05/09/2019	Sampling Date:	05/06/2019
Reported:	05/21/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #1 (H901708-01)

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	05/09/2019	ND	0.022	111	0.0200	0.838	
Toluene*	<0.001	0.001	05/09/2019	ND	0.023	115	0.0200	1.16	
Ethylbenzene*	<0.001	0.001	05/09/2019	ND	0.024	120	0.0200	1.86	
Total Xylenes*	<0.003	0.003	05/09/2019	ND	0.074	123	0.0600	0.994	
Total BTEX	<0.006	0.006	05/09/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *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*	**468**	4.00	05/20/2019	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*	**238**	50.0	05/15/2019	ND	22.8	114	20.0	2.22	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**976**	5.00	05/16/2019	ND	580	110	527	8.00	

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:	05/09/2019	Sampling Date:	05/06/2019
Reported:	05/21/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #2 (H901708-02)

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	05/09/2019	ND	0.022	111	0.0200	0.838	
Toluene*	<0.001	0.001	05/09/2019	ND	0.023	115	0.0200	1.16	
Ethylbenzene*	<0.001	0.001	05/09/2019	ND	0.024	120	0.0200	1.86	
Total Xylenes*	<0.003	0.003	05/09/2019	ND	0.074	123	0.0600	0.994	
Total BTEX	<0.006	0.006	05/09/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *92.7 %* *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*	**116**	4.00	05/20/2019	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*	**116**	25.0	05/15/2019	ND	22.8	114	20.0	2.22	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**616**	5.00	05/16/2019	ND	580	110	527	8.00	

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:	05/09/2019	Sampling Date:	05/06/2019
Reported:	05/21/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #3 (H901708-03)

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	05/09/2019	ND	0.022	111	0.0200	0.838	
Toluene*	<0.001	0.001	05/09/2019	ND	0.023	115	0.0200	1.16	
Ethylbenzene*	<0.001	0.001	05/09/2019	ND	0.024	120	0.0200	1.86	
Total Xylenes*	<0.003	0.003	05/09/2019	ND	0.074	123	0.0600	0.994	
Total BTEX	<0.006	0.006	05/09/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.3 %* *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*	**264**	4.00	05/20/2019	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*	**240**	50.0	05/15/2019	ND	22.8	114	20.0	2.22	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**636**	5.00	05/16/2019	ND	580	110	527	8.00	

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

Phone#: (575) 393-9174 Fax#: (575)397-1471

Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240

Phone #: (575) 393-9174 Fax #: (575) 397-1471

Project #: Project Name: BD Junction F29 & F-29-1

Project Location: T21S R37E Sec29 F~ Lea County New Mexico

Sampler Signature: Rozanne Johnson (575)631-9310

H901708

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		5/6	15:30
2	Monitor Well #2	G	3	X				2				1		5/6	10:15
3	Monitor Well #3	G	3	X				2				1		5/6	12:25

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	

Relinquished by: Rozanne Johnson Date: 5/9/2019 Time: 14:15

Relinquished by: Date: Time:

Received by: Date: Time:

Received By: (Laboratory Staff) Jodi Henson Date: 5/9/19 Time: 14:16

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

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

CHECKED BY: (Initials) JH

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

August 28, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION F-29 & F-29-1

Enclosed are the results of analyses for samples received by the laboratory on 08/23/19 16:05.

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:	08/23/2019	Sampling Date:	08/20/2019
Reported:	08/28/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #1 (H902919-01)

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	08/27/2019	ND	0.021	103	0.0200	1.14	
Toluene*	<0.001	0.001	08/27/2019	ND	0.020	100	0.0200	2.16	
Ethylbenzene*	<0.001	0.001	08/27/2019	ND	0.021	103	0.0200	0.500	
Total Xylenes*	<0.003	0.003	08/27/2019	ND	0.062	104	0.0600	0.453	
Total BTEX	<0.006	0.006	08/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.7 %* *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*	**468**	4.00	08/27/2019	ND	104	104	100	3.92	

Sulfate 375.4 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**211**	50.0	08/27/2019	ND	21.4	107	20.0	0.937	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1300**	5.00	08/28/2019	ND	528	100	527	0.724	

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:	08/23/2019	Sampling Date:	08/20/2019
Reported:	08/28/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #2 (H902919-02)

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	08/27/2019	ND	0.021	103	0.0200	1.14	
Toluene*	<0.001	0.001	08/27/2019	ND	0.020	100	0.0200	2.16	
Ethylbenzene*	<0.001	0.001	08/27/2019	ND	0.021	103	0.0200	0.500	
Total Xylenes*	<0.003	0.003	08/27/2019	ND	0.062	104	0.0600	0.453	
Total BTEX	<0.006	0.006	08/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.2 %* *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*	**120**	4.00	08/27/2019	ND	104	104	100	3.92	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**119**	25.0	08/27/2019	ND	21.4	107	20.0	0.937	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**570**	5.00	08/27/2019	ND	528	100	527	0.724	

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:	08/23/2019	Sampling Date:	08/20/2019
Reported:	08/28/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #3 (H902919-03)

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	08/27/2019	ND	0.021	103	0.0200	1.14	
Toluene*	<0.001	0.001	08/27/2019	ND	0.020	100	0.0200	2.16	
Ethylbenzene*	<0.001	0.001	08/27/2019	ND	0.021	103	0.0200	0.500	
Total Xylenes*	<0.003	0.003	08/27/2019	ND	0.062	104	0.0600	0.453	
Total BTEX	<0.006	0.006	08/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.2 %* *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*	**252**	4.00	08/27/2019	ND	104	104	100	3.92	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**227**	50.0	08/27/2019	ND	21.4	107	20.0	0.937	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**964**	5.00	08/27/2019	ND	528	100	527	0.724	

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: BD Junction F29 & F-29-1
Project Location: T21S R37E Sec29 F~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H902919

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	3	X				2				1		8/20	14:30		X																X	X	X	
2	Monitor Well #2	G	3	X				2				1		8/20	10:10		X																X	X	X	
3	Monitor Well #3	G	3	X				2				1		8/20	11:30		X																X	X	X	

ANALYSIS REQUEST

(Circle or Specify Method No.)

Relinquished by: Rozanne Johnson	Date: 8/23/2019	Time: 16:05	Received by: Tamara Oldaker	Date: 8-23-19	Time: 16:05
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:

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) TO

REMARKS:

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

CARDINAL Laboratories

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

November 19, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION F-29 & F-29-1

Enclosed are the results of analyses for samples received by the laboratory on 11/11/19 15:05.

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:	11/11/2019	Sampling Date:	11/06/2019
Reported:	11/19/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #1 (H903823-01)

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	11/13/2019	ND	0.020	99.3	0.0200	1.96	
Toluene*	<0.001	0.001	11/13/2019	ND	0.020	99.5	0.0200	3.37	
Ethylbenzene*	<0.001	0.001	11/13/2019	ND	0.021	103	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/13/2019	ND	0.060	101	0.0600	3.25	
Total BTEX	<0.006	0.006	11/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.9 %* *74-98*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**400**	4.00	11/13/2019	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*	**208**	50.0	11/13/2019	ND	19.5	97.4	20.0	1.60	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1200**	5.00	11/14/2019	ND	564	107	527	0.964	

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:	11/11/2019	Sampling Date:	11/06/2019
Reported:	11/19/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #2 (H903823-02)

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	11/13/2019	ND	0.020	99.3	0.0200	1.96	
Toluene*	<0.001	0.001	11/13/2019	ND	0.020	99.5	0.0200	3.37	
Ethylbenzene*	<0.001	0.001	11/13/2019	ND	0.021	103	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/13/2019	ND	0.060	101	0.0600	3.25	
Total BTEX	<0.006	0.006	11/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.8 %* *74-98*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**116**	4.00	11/13/2019	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*	**121**	25.0	11/13/2019	ND	19.5	97.4	20.0	1.60	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**596**	5.00	11/14/2019	ND	564	107	527	0.964	

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:	11/11/2019	Sampling Date:	11/06/2019
Reported:	11/19/2019	Sampling Type:	Water
Project Name:	BD JUNCTION F-29 & F-29-1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 29 F ~ LEA COUNTY, NM		

Sample ID: MONITOR WELL #3 (H903823-03)

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	11/13/2019	ND	0.020	99.3	0.0200	1.96	
Toluene*	<0.001	0.001	11/13/2019	ND	0.020	99.5	0.0200	3.37	
Ethylbenzene*	<0.001	0.001	11/13/2019	ND	0.021	103	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/13/2019	ND	0.060	101	0.0600	3.25	
Total BTEX	<0.006	0.006	11/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *74-98*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**264**	4.00	11/13/2019	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*	**238**	50.0	11/13/2019	ND	19.5	97.4	20.0	1.60	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**871**	5.00	11/14/2019	ND	564	107	527	0.964	

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

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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: BD Junction F29 & F-29-1
Project Location: T21S R37E Sec29 F~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY) H903823	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	3	X				2				1		11/6	14:00		X																X	X	X	
2	Monitor Well #2	G	3	X				2				1		11/6	9:50		X																X	X	X	
3	Monitor Well #3	G	3	X				2				1		11/6	11:15		X																X	X	X	

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by: Rozanne Johnson	Date: 11/11/2019	Time: 11:00	Received by:	Date: 11/11/2019	Time: 11:01
Relinquished by:	Date: 11/11/2019	Time: 15:05	Received By: (Laboratory Staff)	Date: 11-11-19	Time: 15:05

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) TEG
	No		No		