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 L-36 EOL (1R426-278): UL/L, Sec. 36, 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 site is located approximately 2 miles east of Eunice, New Mexico at UL/L, Sec. 36, T21S, R37E as shown on the Geographical Location Map. Groundwater sampling at the site indicated the depth to groundwater is approximately 47 feet below ground surface (bgs).

An Investigation and Characterization Plan (ICP) was submitted to NMOCD on April 24, 2015 and approved May 7, 2015. The site was investigated through soil bore installation resulting in elevated chloride concentrations that decreased with depth.

A Corrective Action Plan (CAP) and CAP Addendum was submitted and approved by NMOCD on October 30, 2017. According to the NMOCD approved CAP, a 91x31-ft 20-mil reinforced liner was installed and properly seated at 4.5 ft bgs which covered the previously installed 20x20 ft clay liner. The site was backfilled and seeded with a blend of native vegetation. A CAP Report and Soil Closure Request detailing this work was submitted to the NMOCD on May 17, 2018. The report also requested three monitoring wells be installed near the source, up-gradient and down-gradient of the site. NMOCD approved this report and granted 'Soil Closure' on June 20, 2018.

On June 27, 2019, a near-source well (MW-1) was installed approximately 40 ft southeast of the source, and lithology soil samples were collected at regular intervals. The well was developed and sampled quarterly. Sampling resulted in a chloride concentration of 550 mg/L in the 4th quarterly sample of 2019. On November 13, 2019, an up-gradient well (MW-2) and a down-gradient well (MW-3) were installed. The up-gradient well (MW-2) had an initial chloride

concentration of 360 mg/L, and the down-gradient well (MW-3) had an initial chloride concentration of 1,010 mg/L.

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.
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,

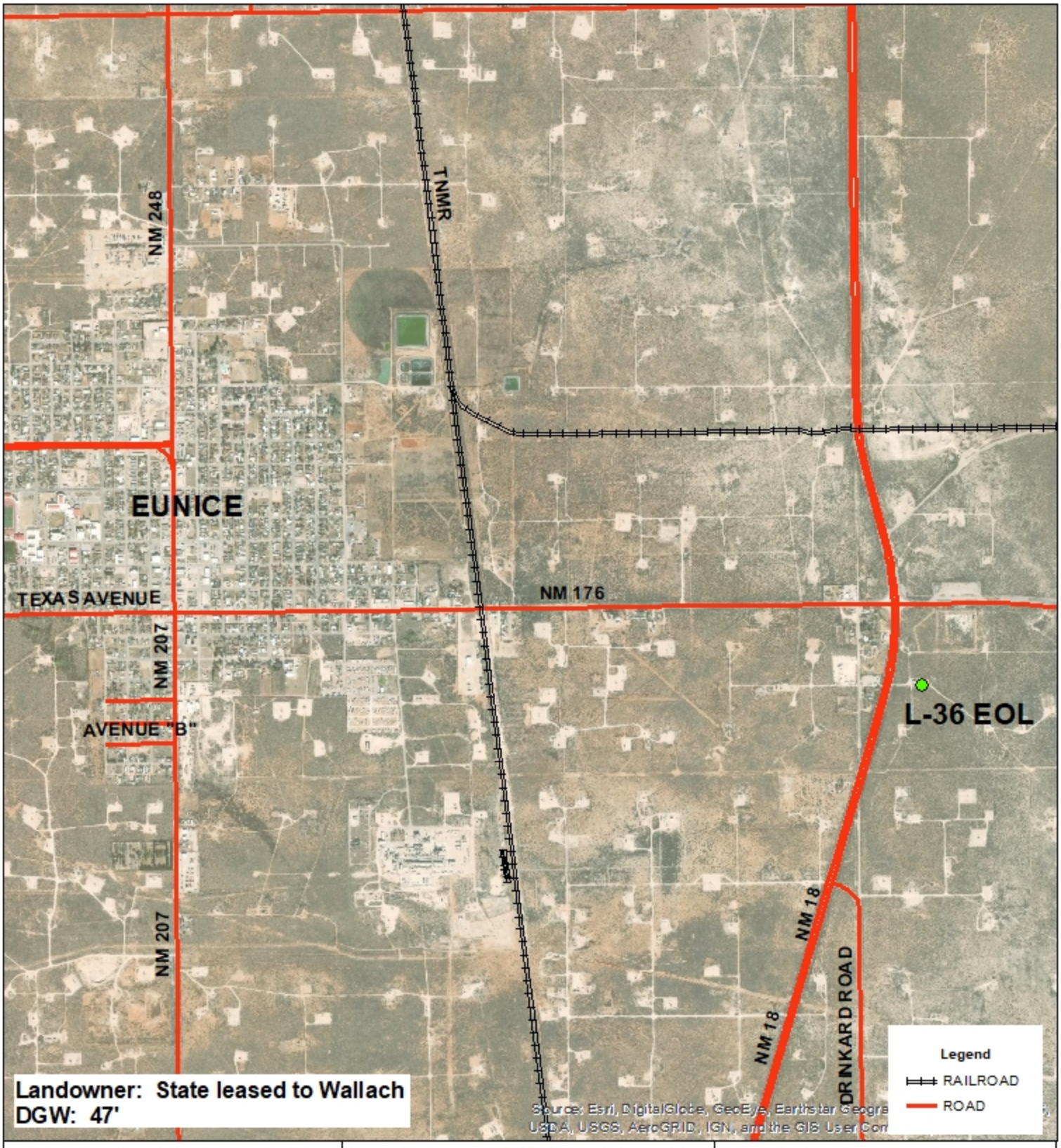
Katie Davis

Katie Davis
Environmental Manager
RICE Operating Company (ROC)

Cc – Edward J. Hansen (ROC)

appendix

Geographic Location



RICE OPERATING COMPANY
ROC
SINCE 1955

BD
L-36 EOL
1R426-278

UL L SECTION 36
T-21-S R-37-E
LEA COUNTY, NM

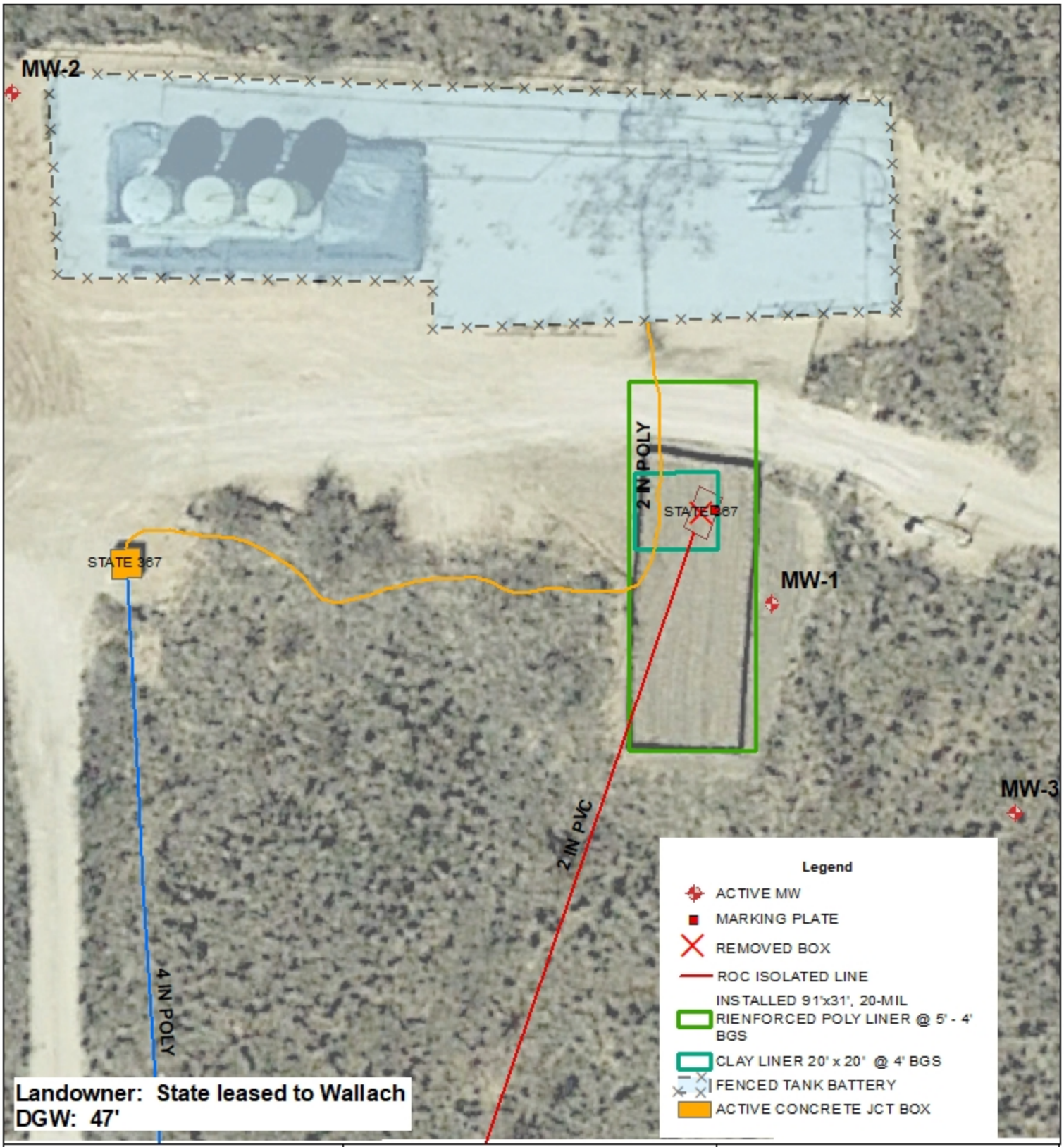
GPS: 32.431908, -103.122049
NAD 83 STATE PLANE PROJECTION
NM EAST ZONE

0 1,000 2,000
Feet

N
W E
S

GPS Date: 7/10/15 CF, 7/1/19 TG
Drawing date: 3/6/20
Drafted by: T. Grieco

Area Map



RICE OPERATING COMPANY
ROC
SINCE 1955

BD
L-36 EOL
1R426-278

UL L SECTION 36
T-21-S R-37-E
LEA COUNTY, NM

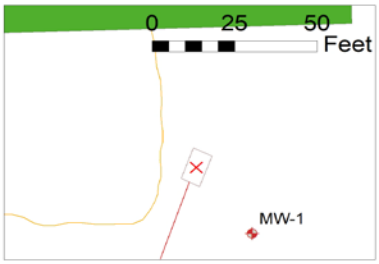
GPS: 32.431908, -103.122049
NAD 83 STATE PLANE PROJECTION
NM EAST ZONE

0 25 50
Feet

N
W E
S

GPS Date: 7/10/15 CF, 7/1/19 TG
Drawing date: 3/6/20
Drafted by: T. Grieco

Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Air Rotary
Start Date:	6/27/2019
End Date:	6/27/2019



TASMAN GEOSCIENCES

Project Name: BD L-36 EOL

Well ID: MW-1

Project Consultant: Tasman

Comments: Soil samples were collected from drill cuttings at specified intervals. Located approximately 30 ft southeast of the former end of line (EOL) junction box.

DRAFTED BY: N.Kopiasz

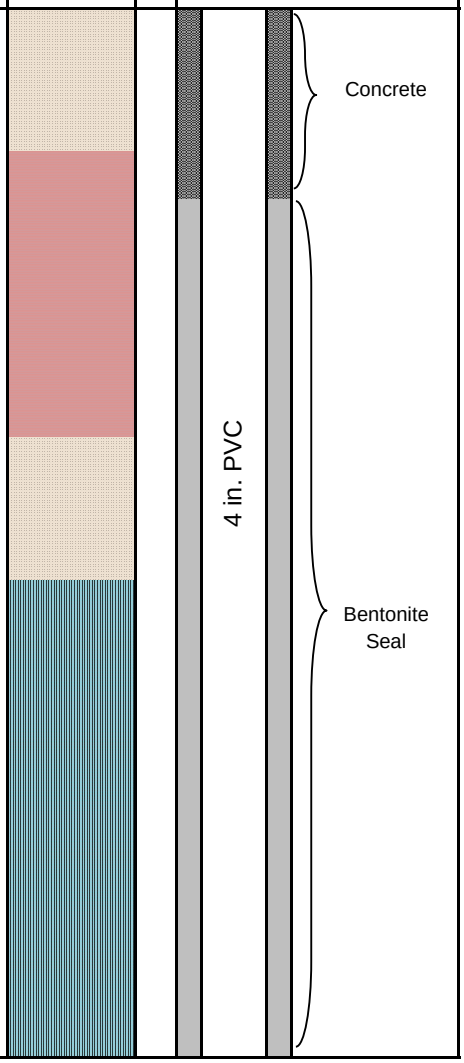
TD = 86 ft (bgs) GW = 47 ft (bgs)

Location: Unit L, Section 36, T21S, R37E

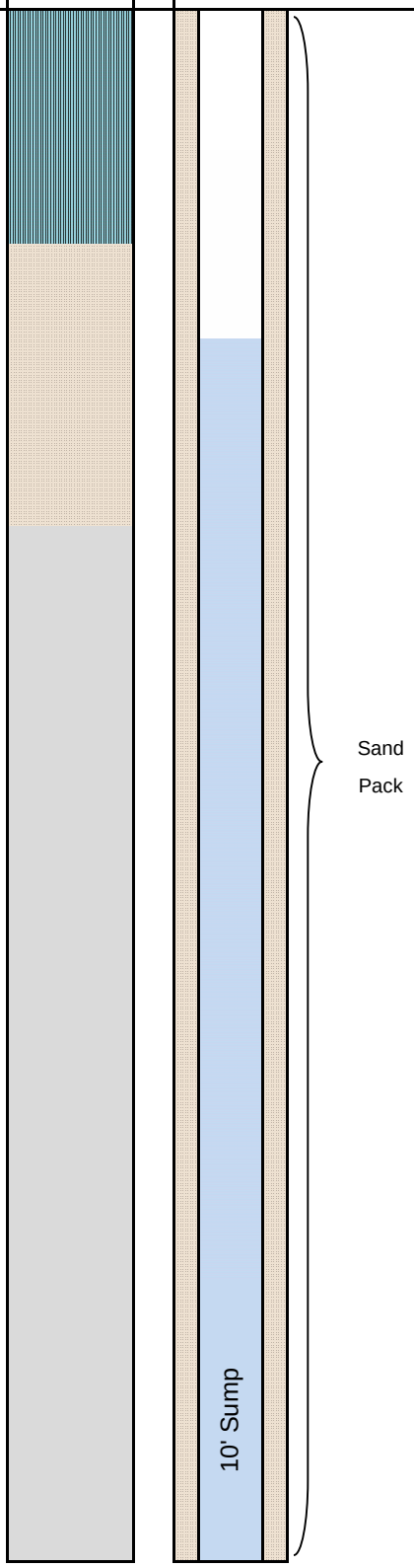
Lat: 32.431845 (NAD83) **County:** Lea

Long: -103.121995 **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description
				SW-brown, well graded sands with silts, pebbles of caliche
SS				
				SM-reddish brown, silty sand
5 ft				
				SM-light tan, silty fine sand
10 ft				
				SW-light tan, well graded with mechanically weathered caliche pebbles
15 ft				
				GW-light brown, well graded gravels , weathered caliche and sandstone pebbles
20 ft				
				GW-Same As Above (SAA)
25 ft				
				GW-SAA
30 ft				



Depth (feet)	Chloride field tests	LAB	PID	Description
				GW-SAA
35 ft				
				GW-SAA
40 ft				
				SW-reddish tan, well graded, cohesive fine sands and caliche, moist
45 ft				
				SW-SAA
50 ft				
				No Recovery (NR)-Lost circulation of sediments to surface. Drilled to 86' TD and sediments came up while circulating. Sub-angular to sub-rounded gravels of chert, quartz, sandstone. Possible paleochannel sediments.
55 ft				
60 ft				
				NR
65 ft				
				NR
70 ft				
				NR
75 ft				
				NR
80 ft				
				NR
85 ft				
				NR
90 ft				



Rice Operating Company
BD L-36 EOL
Monitoring Well Drilling
6/27/2019

MW-1 Drilling

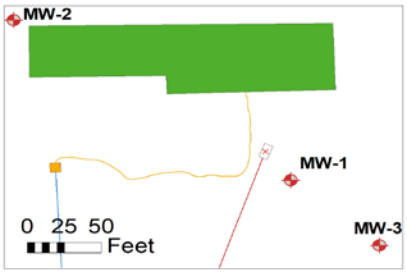
MW-1 Building well

Rice Operating Company
BD L-36 EOL
Monitoring Well Drilling
6/27/2019

MW-1 Completed

MW-1 Labeled

Logger:	Nick Kopiasz
Driller:	HCI Drilling
Drilling Method:	6" Mud Rotary
Start Date:	11/13/2019
End Date:	11/13/2019



TASMAN GEOSCIENCES

Project Name: BD L-36 EOL

Well ID: MW-2

Project Consultant: Tasman

Comments: Located approximately 200 ft northwest of the former end of line (EOL) junction box. Soil samples were collected from drill cuttings at specified intervals.

DRAFTED BY: N.Kopiasz

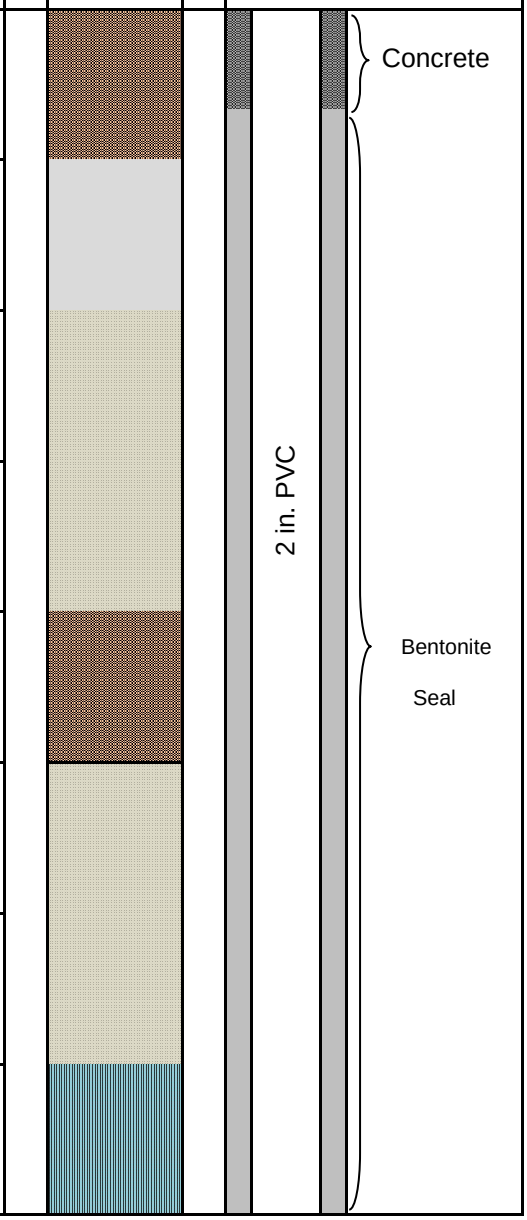
TD = 60 ft (bgs) GW = 47 ft (bgs)

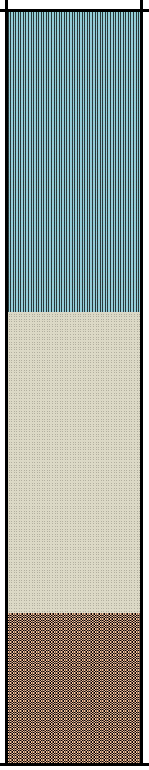
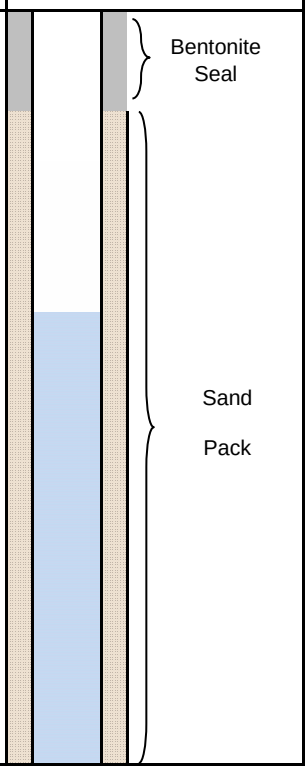
Location: Unit L, Section 36, T21S, R37E

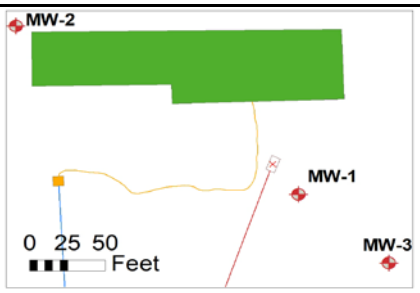
Lat: 32.432197 NAD83 **Long:** -103.122597

County: Lea **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description
				SP-reddish tan, poorly graded fine sands
SS				
				NR-No Recovery
5 ft				
				SW-off-white to cream, well graded caliche and sand grains
10 ft				
				SW- Same As Above (SAA)
15 ft				
				SP-tan, poorly graded fine sand, occasional gravel sized sandstone chunks
20 ft				
				SW-light tan, well graded sand with mechanically weathered caliche
25 ft				
				SW-SAA
30 ft				
				GW-light tan, well graded mecahnically weathered caliche and sandstone gravels
35 ft				



Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				GW-SAA		
40 ft						
				GW-SAA		
45 ft						
				SW-light tan, well graded caliche and sandstone grains, some fine grained sands		
50 ft						
				SW-light tan to grey mottled texture, coarse caliche and sandstone grains to silty fine sand		
55 ft						
				SP-reddish tan, poorly graded fine sands		
60 ft						

Logger:	Nick Kopiasz		TASMAN GEOSCIENCES
Driller:	HCI Drilling		
Drilling Method:	6" Mud Rotary		**Project Name:** BD L-36 EOL **Well ID:** MW-3
Start Date:	11/13/2019		
End Date:	11/13/2019		**Project Consultant:** Tasman

Comments: Located approximately 100 ft southeast of the former end of line (EOL) junction box. Soil samples were collected from drill cuttings at specified intervals.

DRAFTED BY: N.Kopiasz

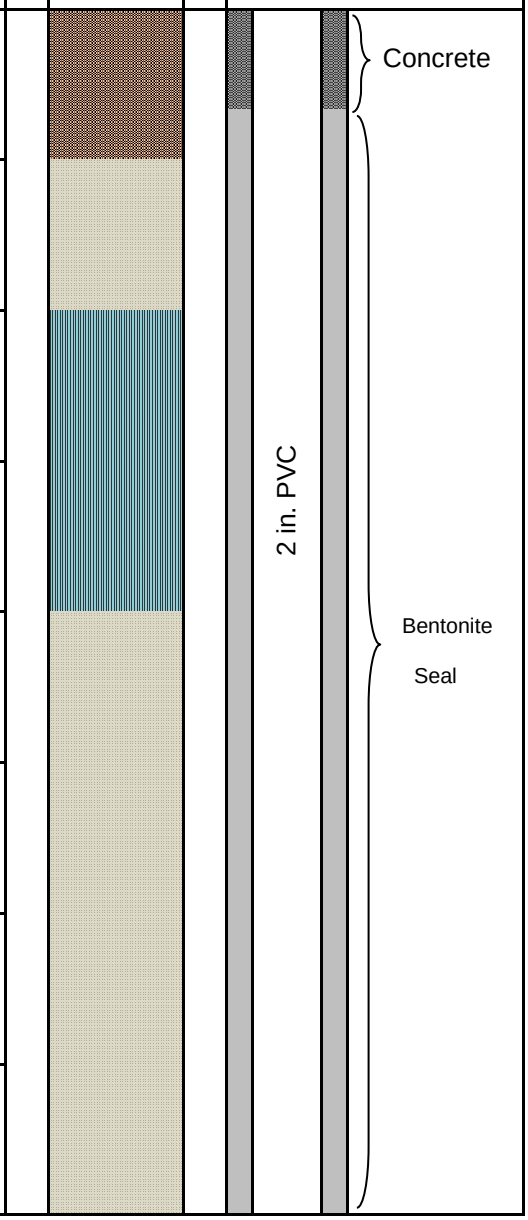
TD = 60 ft (bgs) GW = 47 ft (bgs)

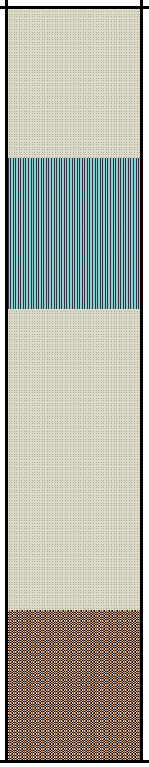
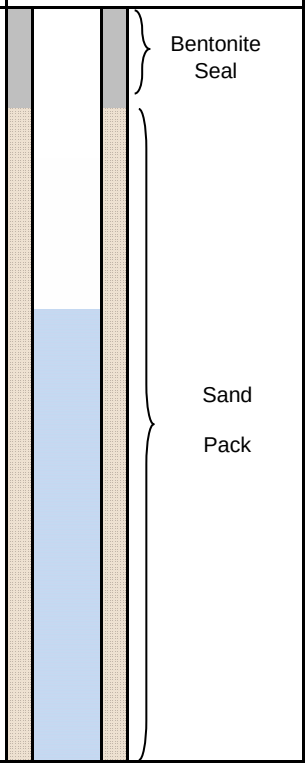
Location: Unit L, Section 36, T21S, R37E

Lat: 32.431702 NAD83 **County:** Lea

Long: -103.121802 **State:** NM

Depth (feet)	Chloride field tests	LAB	PID	Description
				SP-reddish tan, poorly graded fine sands
SS				
				SW-light tan, well graded sands, mechanically weathered caliche
5 ft				
				GW-light tan, well graded caliche and sandstone gravels
10 ft				
				GW-Same As Above (SAA)
15 ft				
				SW-tan, well graded coarse sandstone and caliche grains
20 ft				
				SW-SAA
25 ft				
				SW-light tan, well graded sands, mechanically weathered caliche and red sandstone
30 ft				
				SW-SAA
35 ft				



Depth (feet)	Chloride field tests	LAB	PID	Description	Lithology	Well Construction
				SW-SAA		
40 ft						
				GW-light tan and off-white, gravels of mechanically weathered caliche		
45 ft						
				SW-light tan, well graded sands with subrounded quartz grains		
50 ft						
				SW-light tan with mottled reddish texture, well graded sands		
55 ft						
				SP-reddish tan, poorly graded fine sands		
60 ft						

Rice Operating Company
BD L-36 EOL
Monitoring Well Drilling
11/13/2019

MW-2 Drilling

MW-2 Drilling

Rice Operating Company
BD L-36 EOL
Monitoring Well Drilling
11/13/2019

MW-3 Overview

MW-3 Drilling

Rice Operating Company
BD L-36 EOL
Monitoring Well Drilling
11/13/2019

MW-3 Completed

ROC - BD L-36 EOL (1R426-278)
Unit Letter L, Section 36, 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	45.58	88.6	28	100	7/23/2019	490	2,010	<0.001	<0.001	<0.001	<0.003	560	Clear No odor
1	45.53	88.6	28	100	10/22/2019	550	1,840	<0.001	<0.001	<0.001	<0.003	602	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	47.78	63.75	2.6	10	12/16/2019	360	1,690	<0.001	<0.001	<0.001	<0.003	510	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	43.94	63.93	3.2	10	12/16/2019	1,010	2,940	<0.001	<0.001	<0.001	<0.003	557	Clear No odor

CARDINAL Laboratories

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

July 31, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD L-36 EOL

Enclosed are the results of analyses for samples received by the laboratory on 07/26/19 13:02.

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:	07/26/2019	Sampling Date:	07/23/2019
Reported:	07/31/2019	Sampling Type:	Water
Project Name:	BD L-36 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 36 L ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #1 (H902572-01)

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	07/26/2019	ND	0.019	93.7	0.0200	0.468	
Toluene*	<0.001	0.001	07/26/2019	ND	0.018	89.2	0.0200	3.72	
Ethylbenzene*	<0.001	0.001	07/26/2019	ND	0.019	93.8	0.0200	3.77	
Total Xylenes*	<0.003	0.003	07/26/2019	ND	0.053	88.1	0.0600	3.89	
Total BTEX	<0.006	0.006	07/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *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*	**490**	4.00	07/29/2019	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*	**560**	125	07/31/2019	ND	18.7	93.6	20.0	0.107	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**2010**	5.00	07/30/2019	ND	533	101	527	2.69	

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 L-36 EOL
Project Location: T21S R37E Sec36 L ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H902572

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		7/23	16:20

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	Anions (Cl, SO4, CO3, HCO3)	Cations (Ca, Mg, Na, K)	Sulfates (SO4)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 7/26/2019	Time: 13:02	Received by: Tamara Oldaker
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)

Date: 7-26-19 Time: 13:02

Date: Time:

Phone Results: Yes No

Fax Results: Yes No Additional Fax Number:

REMARKS:

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

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

Sample Condition: Cool: Yes / Intact: Yes

CHECKED BY: (Initials) TO

CARDINAL Laboratories

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

October 31, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD L-36 EOL

Enclosed are the results of analyses for samples received by the laboratory on 10/24/19 14:55.

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:	10/24/2019	Sampling Date:	10/22/2019
Reported:	10/31/2019	Sampling Type:	Water
Project Name:	BD L-36 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 36 L ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #1 (H903652-01)

BTEX 8021B mg/L Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	10/30/2019	ND	0.022	110	0.0200	2.88	
Toluene*	<0.001	0.001	10/30/2019	ND	0.019	96.8	0.0200	0.762	
Ethylbenzene*	<0.001	0.001	10/30/2019	ND	0.022	108	0.0200	5.41	
Total Xylenes*	<0.003	0.003	10/30/2019	ND	0.061	102	0.0600	0.991	
Total BTEX	<0.006	0.006	10/30/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *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*	**550**	4.00	10/25/2019	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*	**602**	125	10/25/2019	ND	23.9	120	20.0	10.7	

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	10/28/2019	ND	517	98.1	527	5.18	

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

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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.
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

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 L-36 EOL
Project Location: T21S R37E Sec36 L ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H90365

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		10/22	11:45

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	Anions (Cl, SO4, CO3, HCO3)	Cations (Ca, Mg, Na, K)	Sulfates (SO4)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X																	X	X	X	

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by: Rozanne Johnson	Date: 10/24/2019	Time: 13:35	Received by:
Relinquished by:	Date: 10/24/19	Time: 14:55	Received By: (Laboratory Staff)
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool: Yes / No; Intact: Yes / No		CHECKED BY: (Initials) JO

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

December 26, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD L-36 EOL

Enclosed are the results of analyses for samples received by the laboratory on 12/16/19 14:21.

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:	12/16/2019	Sampling Date:	12/16/2019
Reported:	12/26/2019	Sampling Type:	Water
Project Name:	BD L-36 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 36 L ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #2 (H904197-01)

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	12/21/2019	ND	0.022	108	0.0200	1.18	
Toluene*	<0.001	0.001	12/21/2019	ND	0.021	105	0.0200	0.947	
Ethylbenzene*	<0.001	0.001	12/21/2019	ND	0.021	107	0.0200	1.06	
Total Xylenes*	<0.003	0.003	12/21/2019	ND	0.063	104	0.0600	1.07	
Total BTEX	<0.006	0.006	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *58.2-133*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**360**	4.00	12/17/2019	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*	**510**	125	12/18/2019	ND	21.7	108	20.0	6.52	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1690**	5.00	12/18/2019	ND	585	111	527	3.05	

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:	12/16/2019	Sampling Date:	12/16/2019
Reported:	12/26/2019	Sampling Type:	Water
Project Name:	BD L-36 EOL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T21S R37E SEC 36 L ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #3 (H904197-02)

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	12/21/2019	ND	0.022	108	0.0200	1.18	
Toluene*	<0.001	0.001	12/21/2019	ND	0.021	105	0.0200	0.947	
Ethylbenzene*	<0.001	0.001	12/21/2019	ND	0.021	107	0.0200	1.06	
Total Xylenes*	<0.003	0.003	12/21/2019	ND	0.063	104	0.0600	1.07	
Total BTEX	<0.006	0.006	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *58.2-133*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**1010**	4.00	12/17/2019	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*	**557**	125	12/18/2019	ND	21.7	108	20.0	6.52	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**2940**	5.00	12/18/2019	ND	585	111	527	3.05	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: BD L-36 EOL
Project Location: T21S R37E Sec36 L ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY) H904497	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 #2	G	3	X				2				1		12/16	9:40
2	Monitor Well #3	G	3	X				2				1		12/16	11:05

	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	Anions (Cl, SO4, CO3, HCO3)	Cations (Ca, Mg, Na, K)	Sulfates (SO4)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
1		X																	X	X	X	
2		X																	X	X	X	

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by: Rozanne Johnson	Date: 12/16/2019	Time: 14:20	Received by:	Date:	Time:	
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff) Jodi Henson	Date: 12/16/19	Time: 14:21	

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)