

RECEIVED: <u>8/17/2018</u>	REVIEWER:	TYPE: <u>SWD</u>	APP NO: <u>PMAM18229 50450</u>
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ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Geological & Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505

**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND
 REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: Rice Operating Company **OGRID Number:** 019174
Well Name: P-15 **API:** 30-025-Heiding
Pool: SWD, San Andres **Pool Code:** 96121

**SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION
 INDICATED BELOW**

- 1) **TYPE OF APPLICATION:** Check those which apply for [A]
 A. Location – Spacing Unit – Simultaneous Dedication
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD
- B. Check one only for [I] or [II]
 [I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
 [II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

SWD-175D

- 2) **NOTIFICATION REQUIRED TO:** Check those which apply.
 A. ☒ Offset operators or lease holders
 B. ☐ Royalty, overriding royalty owners, revenue owners
 C. ☒ Application requires published notice
 D. ☒ Notification and/or concurrent approval by SLO
 E. ☐ Notification and/or concurrent approval by BLM
 F. ☒ Surface owner
 G. ☒ For all of the above, proof of notification or publication is attached, and/or,
 H. ☐ No notice required

FOR OCD ONLY

- ☐ Notice Complete
☐ Application
 Content
 Complete

- 3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Hayden Holub

Print or Type Name

Signature

08-16-2018

Date

(575) 393-9174

Phone Number

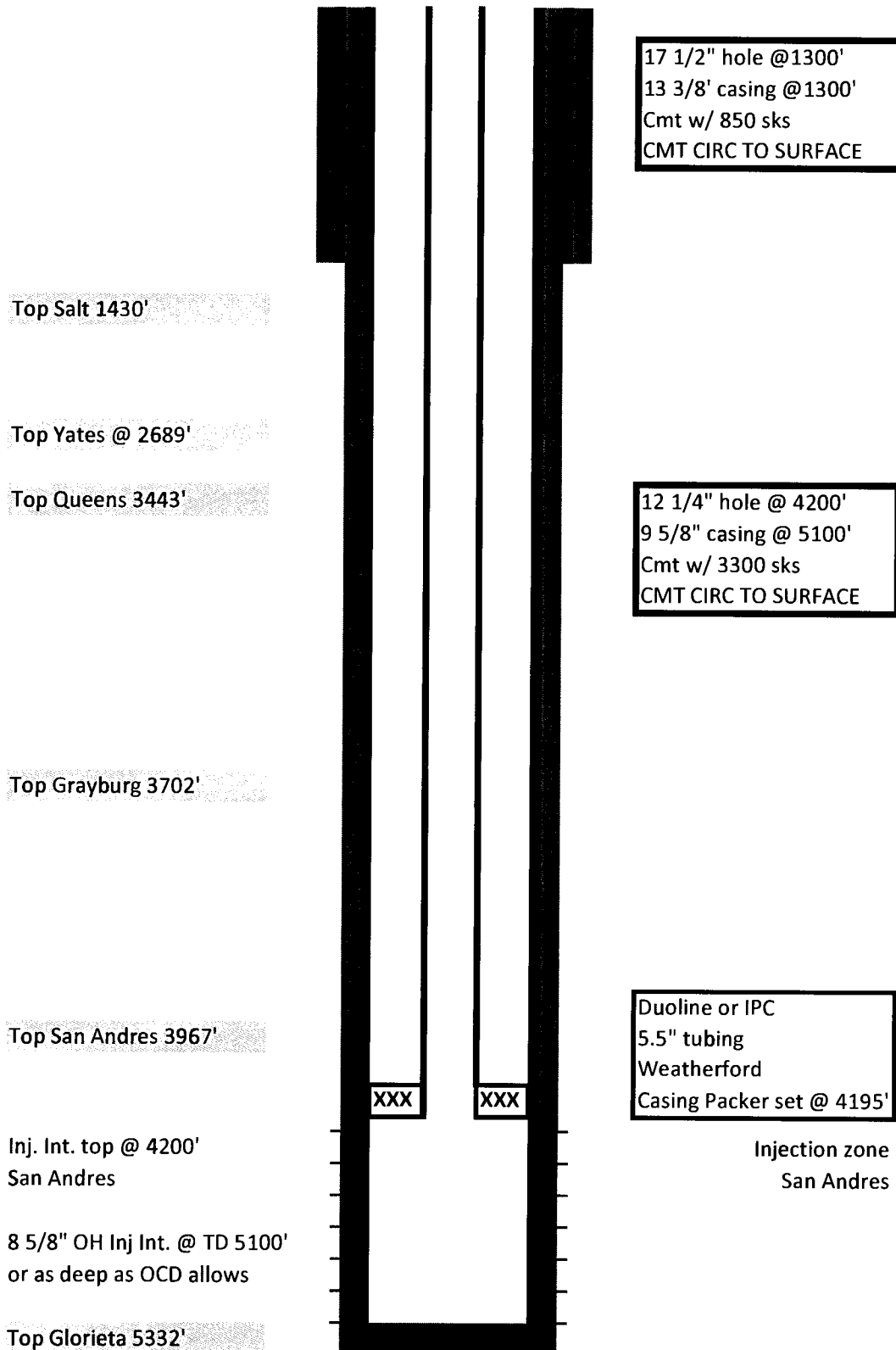
hholub@riceswd.com

e-mail Address

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance X Disposal _____ Storage
Application qualifies for administrative approval? _____ Yes _____ No
- II. OPERATOR: Rice Operating Company
- ADDRESS: 112 W Taylor Hobbs, Nm 88240
- CONTACT PARTY: Hayden Holub PHONE: 575-393-9174
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? _____ Yes X No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Hayden Holub TITLE: Manager
SIGNATURE: [Signature] DATE: 08-16-2018
- E-MAIL ADDRESS: hholub@riceswd.com
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

Rice Operating Co.
DRILLING FOR INJECTION SWD P-15
UL P SEC 15 T21S R36E
58' FSL 988' FEL



INJECTION WELL DATA SHEET

OPERATOR: RICE OPERATING COMPANY

WELL NAME & NUMBER: P-15

WELL LOCATION: 58' FSL 988' FEL P 15 21S 36E

FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

SURFACE CASING

Hole Size: 17 1/2" Casing Size: 13 3/8"

Cemented with: 850 sx. or ft3

Top of Cement: Surface Method Determined: Sight/Circ.

Intermediate Casing

Hole Size: _____ Casing Size: _____

Cemented with: _____ sx. or ft3

Top of Cement: _____ Method Determined: _____

Production Casing

Hole Size: 12 1/4" Casing Size: 9 5/8"

Cemented with: 3300 sx. or ft3

Top of Cement: Circ Method Determined: Sight

Total Depth: 5100'

Injection Interval

4200' _____ feet to 5100' perforated _____

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 5 1/2" Lining Material: IPC or Duoline

Type of Packer: Weatherford Casing Packer

Packer Setting Depth: 4195'

Other Type of Tubing/Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection? X Yes No
- If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: San Andres

3. Name of Field or Pool (if applicable): _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. N/A

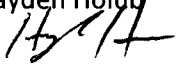
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed

Injection zone in this area:

Grayburg 3702'

Glorieta 5332'

1000

- I. Disposal
- II. Operator: Rice Operating Co. Address: 112 W Taylor, Hobbs, Nm 88240
Contact Party: Hayden Holub Phone: 575-393-9174
- III. Attached
- IV. No
- V. Attached
- VI. No wells penetrate injection interval within .5 mile AoR.
- VII.
 - 1. Average rate is 1100 bbls/hr (26,400/day) Maximum rate 1875 bbls/hr (45K/day)
 - 2. Closed
 - 3. Average pressure 0, maximum pressure 1000 PSI or the max allowed by the OCD.
 - 4. All fluid is oilfield produced water
 - 5. No known disposal zone formation water available within the one mile AoR of the proposed swd well. Attached is analysis of closest known formation water location approx. 5.5 miles NE of swd well. The Rice Operating SWD well State E 27, located approx. 2.5 miles East in UL-E - Sec 18 - 21S - 37E, has been disposing millions of barrels of produced water into the San Andres formation per year since the early 2000s without problems.
- VIII. Lithology record attached. Disposal zone is San Andres (Top @3967', next formation top is Glorieta @ 5332'). Ogallala no deeper than 250'.
No known sources of drinking water underlying the injection zone
- IX. Acidize w/5,000 gal HCL 15% NEFE as needed
- X. New Drill
- XI. Analysis attached for two wells located within 1 mile AoR. The first one is ½ mile South in UI G Sec 22 T21S R36E. The second one is ¾ of a mile to the SE in UL G Sec 23 T21S R36E. Both samples were taken on 7-27-2018.
- XII. I, Hayden Holub, have examined all available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zones and any underground source of drinking water pertaining to this well. Geologic study attached.
- XIII. Attached
- XIV. Name: Hayden Holub Title: Manager
Signature:  Date: 8-16-18
Email: hholub@riceswd.com

P-15



DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3400 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name P-15	Well Number
OGRID No.	Operator Name RICE OPERATING COMPANY	Elevation 3576'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	15	21 S	36 E		58	SOUTH	988	EAST	LEA

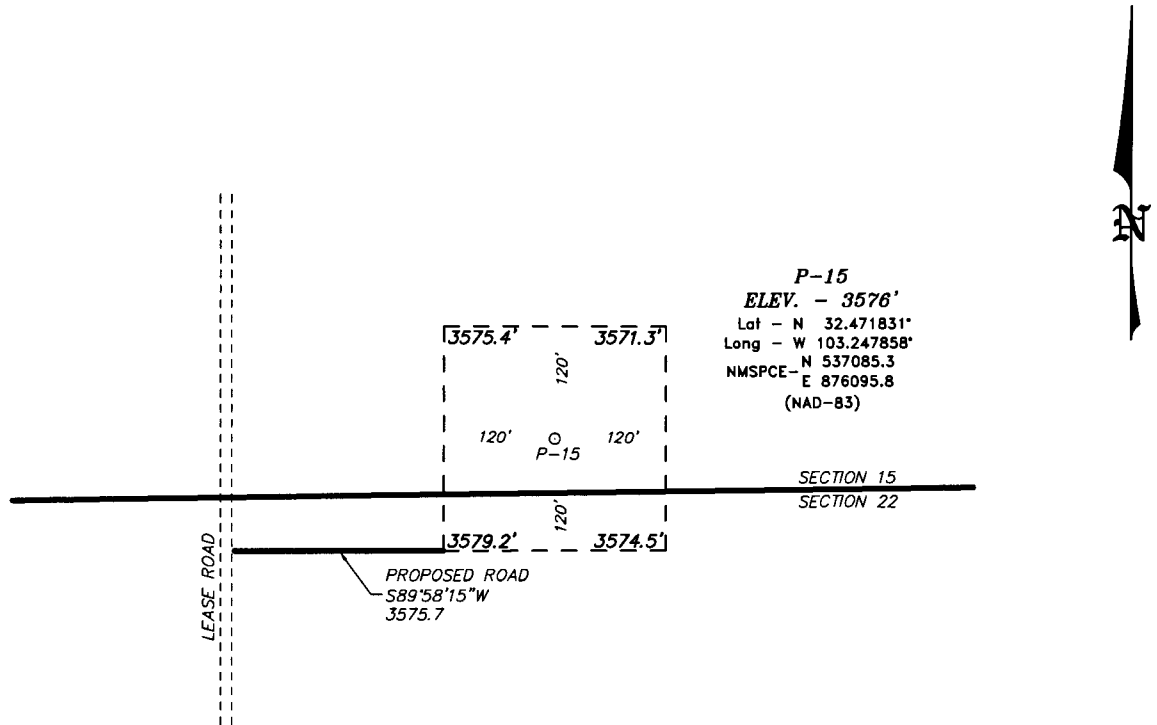
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						

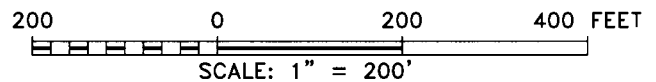
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

N.: 542252.6 E.: 871746.4 (NAD83)		N.: 542320.6 E.: 877032.7 (NAD83)	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature _____ Date _____ Printed Name _____ Email Address _____
			SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date Surveyed _____ Signature of Professional Surveyor _____ Certificate No. 7977 BANK COUNTY
N.: 536971.1 E.: 871797.7 (NAD83)		N.: 537040.1 E.: 877083.9 (NAD83)	<p>SURFACE LOCATION Lat - N 32.471831° Long - W 103.247858° NMSPCE - N 537085.3 E 876095.8 (NAD-83)</p> <p>0' 500' 1000' 1500' 2000' SCALE: 1" = 1000' WO Num.: 33963</p>

**SECTION 15, TOWNSHIP 21 SOUTH, RANGE 36 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.**



EUNICE, NM IS ±5 MILES TO THE SOUTHEAST OF LOCATION.



RICE OPERATING COMPANY

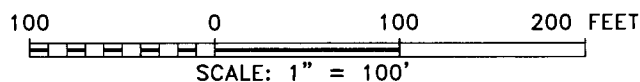
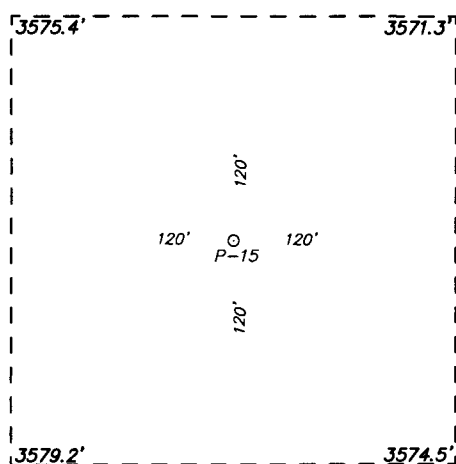
REF: P-15 / WELL PAD TOPO

THE P-15 LOCATED 58' FROM
THE SOUTH LINE AND 988' FROM THE EAST LINE OF
SECTION 15, TOWNSHIP 21 SOUTH, RANGE 36 EAST.
N.M.P.M., LEA COUNTY, NEW MEXICO.



focused on excellence in the oilfield
P.O. Box 1786 (575) 393-7315 - Office
1120 N. West County Rd. (575) 392-2206 - Fax
Hobbs, New Mexico 88241 basinsurveys.com

**SECTION 15, TOWNSHIP 21 SOUTH, RANGE 36 EAST, N.M.P.M.,
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P-15

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0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

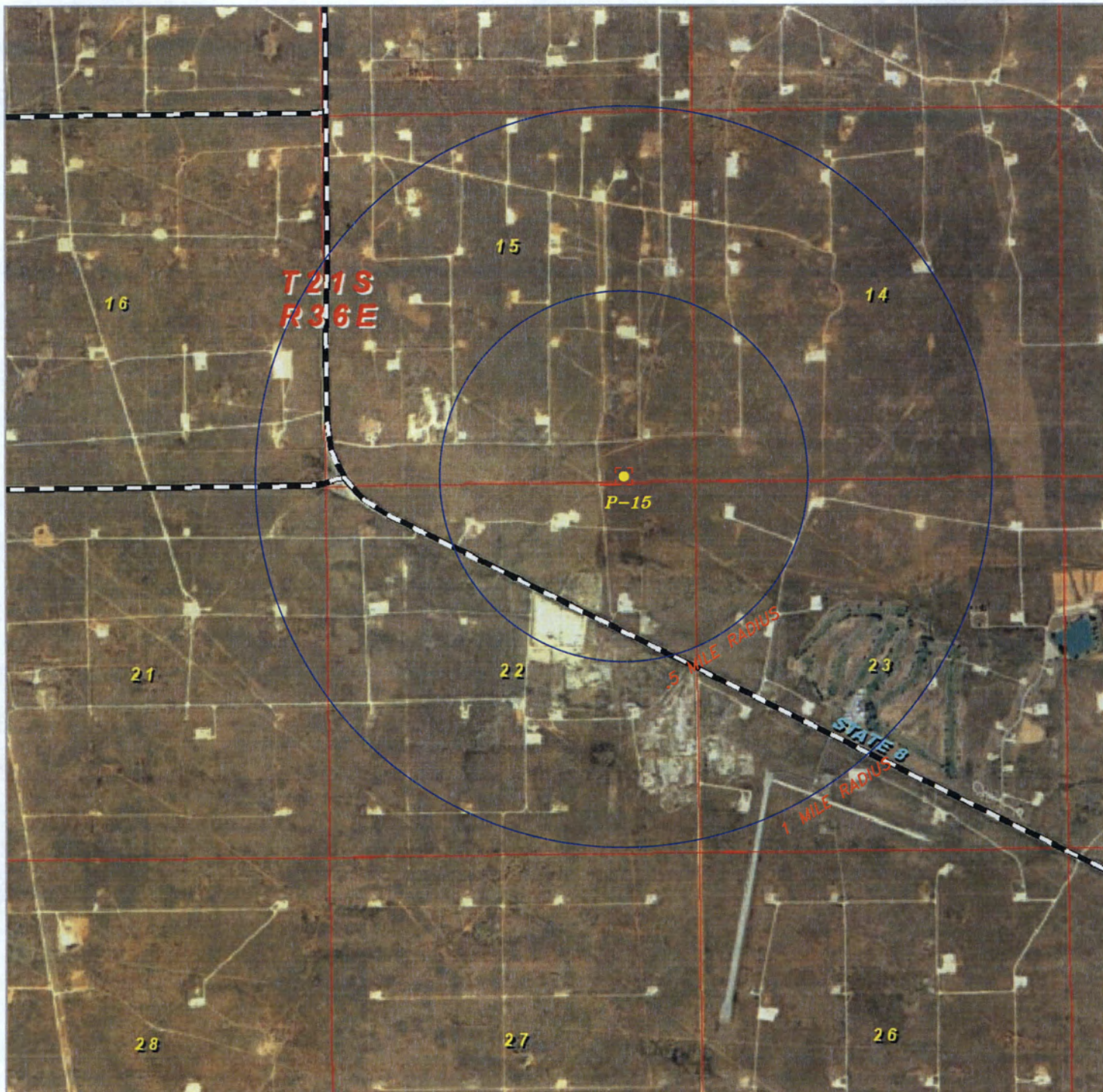
W.O. Number: JG 33963

Survey Date: 7-31-2018

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND



RICE
OPERATING
COMPANY



P-15

Located 58' FSL and 988' FEL
 Section 15, Township 21 South, Range 36 East,
 N.M.P.M., Lea County, New Mexico.

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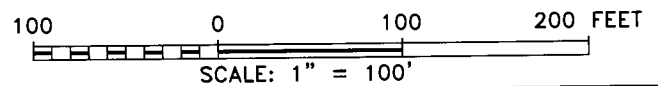
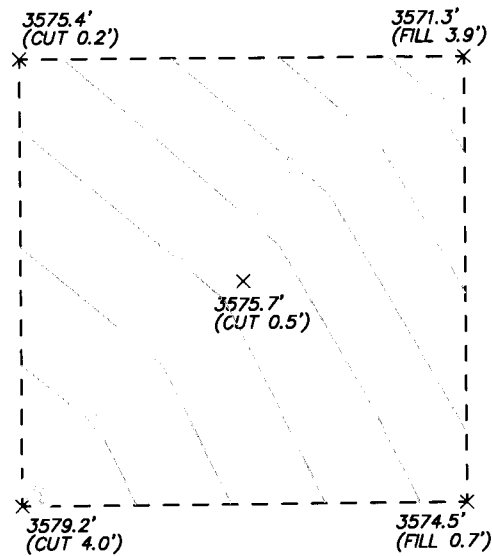
Survey Date: 7-31-2018

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND



**RICE
OPERATING
COMPANY**

**SECTION 15, TOWNSHIP 21 SOUTH, RANGE 36 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.**



RICE OPERATING COMPANY

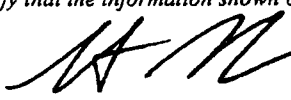
REF: P-15 / CUT & FILL

THE P-15 LOCATED 58' FROM
THE SOUTH LINE AND 988' FROM THE EAST LINE OF
SECTION 15, TOWNSHIP 21 SOUTH, RANGE 36 EAST.

N.M.P.M., LEA COUNTY, NEW MEXICO.

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Hobbs, New Mexico 88241 basinsurveys.com

Submit To Appropriate District Office State Lease - 6 copies Fee Lease - 5 copies District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Rd., Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505		State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505		Form C-105 Revised June 10, 2003	
				WELL API NO. 30-025-37146	
				5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>	
				State Oil & Gas Lease No. B11349	
WELL COMPLETION OR RECOMPLETION REPORT AND LOG					
1a. Type of Well: OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> OTHER _____				7. Lease Name or Unit Agreement Name STATE 10	
b. Type of Completion: NEW <input checked="" type="checkbox"/> WORK <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG <input type="checkbox"/> DIFF. _____ WELL OVER BACK RESVR. <input type="checkbox"/> OTHER _____				8. Well No. 4	
2. Name of Operator LEWIS B. BURLESON, INC.				9. Pool name or Wildcat HARE (SAN ANDRES) EAST	
3. Address of Operator P.O. BOX 2479 MIDLAND, TEXAS 79702					
4. Well Location Unit Letter <u>D</u> : <u>467</u> Feet From The <u>N</u> Line and <u>467</u> Feet From The <u>W</u> Line Section <u>10</u> Township <u>21S</u> Range <u>37E</u> NMPM LEA County _____					
10. Date Spudded 05/25/2005		11. Date T.D. Reached 06/05/2005		12. Date Compl. (Ready to Prod.) 10/01/2005	
				13. Elevations (DF& RKB, RT, GR, etc.) 3469 GR	
15. Total Depth 5510		16. Plug Back T.D. 4325		17. If Multiple Compl. How Many Zones? CAP STAR X	
18. Intervals Drilled By Rotary Tools Cable Tools				19. Producing Interval(s), of this completion - Top, Bottom, Name 4011-4113 SAN ANDRES Used for formation sample	
20. Was Directional Survey Made YES				21. Type Electric and Other Logs Run GRN	
22. Was Well Cored				23. CASING RECORD (Report all strings set in well)	
CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8	24#	1284	12-1/4	595 C	(00)
5-1/2	15.5#	5510	7-7/8	785 C	
24. LINER RECORD			25. TUBING RECORD		
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	PACKER SET
26. Perforation record (interval, size, and number) 4011-4113 21 HOLES			27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 4011-4113 10,000 GAL ACID		
PRODUCTION					
Date First Production 10/01/2005		Production Method (Flowing, gas lift, pumping - Size and type pump) PUMPING 2-1/2X2X16 RHBC		Well Status (Prod. or Shut-in) PROD	
Date of Test 10/01/2005	Hours Tested 24	Choke Size	Prod'n For Test Period	Oil - Bbl 10	Gas - MCF 40
				Water - Bbl. 285	Gas - Oil Ratio 4000:1
Flow Tubing Press. N/A	Casing Pressure 65	Calculated 24-Hour Rate	Oil - Bbl. 10	Gas - MCF 40	Water - Bbl. 285
					Oil Gravity - API - (Corr.) 32
29. Disposition of Gas (Sold, used for fuel, vented, etc.) SOLD					Test Witnessed By STEVEN L. BURLESON
30. List Attachments					
31. I hereby certify that the information shown on both sides of this form as true and complete to the best of my knowledge and belief					
Signature 		Printed Name STEVEN L. BURLESON Title VICE-PRESIDENT		Date 10/20/2005	
E-mail Address GEOTTECH@PRODIGY.NET					



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

June 26, 2018

HAYDEN HOLUB

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: O-34 SWD WELL

Enclosed are the results of analyses for samples received by the laboratory on 06/20/18 15:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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 accredited through the State of Colorado Department of Public Health and Environment for:

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:Rice Operating Company
112 W. Taylor
Hobbs NM, 88240Project: O-34 SWD WELL
Project Number: SEC. 34, T20S, R37E
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471Reported:
26-Jun-18 11:00

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SAN ANDRES FORMATION WATER	H801687-01	Wastewater	19-Jun-18 17:30	20-Jun-18 15:20

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: O-34 SWD WELL
Project Number: SEC. 34, T20S, R37E
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
26-Jun-18 11:00

SAN ANDRES FORMATION WATER

H801687-01 (Wastewater)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories

Inorganic Compounds

Alkalinity, Bicarbonate	2760		5.00	mg/L	1	8061805	AC	22-Jun-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8061805	AC	22-Jun-18	310.1	
Chloride*	9200		4.00	mg/L	1	8062006	AC	21-Jun-18	4500-Cl-B	
Conductivity*	26900		1.00	uS/cm	1	8062108	AC	21-Jun-18	120.1	
pH*	7.96		0.100	pH Units	1	8062108	AC	21-Jun-18	150.1	
Resistivity	0.372			Ohms/m	1	8062108	AC	21-Jun-18	120.1	
Specific Gravity @ 60° F	1.012		0.000	[blank]	1	8062110	AC	22-Jun-18	SM 2710F	
Sulfate*	55.0		25.0	mg/L	2.5	8062112	AC	22-Jun-18	375.4	
TDS*	17700		5.00	mg/L	1	8062115	AC	25-Jun-18	160.1	
Alkalinity, Total*	2270		4.00	mg/L	1	8061805	AC	22-Jun-18	310.1	

Green Analytical Laboratories

Total Recoverable Metals by ICP (E200.7)

Barium*	4.91		2.50	mg/L	50	B806183	JDA	22-Jun-18	EPA200.7	
Calcium*	561		5.00	mg/L	50	B806183	JDA	22-Jun-18	EPA200.7	
Iron*	<2.50		2.50	mg/L	50	B806183	JDA	22-Jun-18	EPA200.7	
Magnesium*	260		5.00	mg/L	50	B806183	JDA	22-Jun-18	EPA200.7	
Potassium*	271		50.0	mg/L	50	B806183	JDA	22-Jun-18	EPA200.7	
Sodium*	4950		50.0	mg/L	50	B806183	JDA	22-Jun-18	EPA200.7	

*=Accredited Analyte

Cardinal Laboratories

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: O-34 SWD WELL
Project Number: SEC. 34, T20S, R37E
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
26-Jun-18 11:00

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8061805 - General Prep - Wet Chem										
Blank (8061805-BLK1)										
				Prepared: 18-Jun-18 Analyzed: 19-Jun-18						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	10.0	5.00	mg/L							
Alkalinity, Total	8.00	4.00	mg/L							
LCS (8061805-BS1)										
				Prepared: 18-Jun-18 Analyzed: 19-Jun-18						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120			
Alkalinity, Total	260	10.0	mg/L	250		104	80-120			
LCS Dup (8061805-BSD1)										
				Prepared: 18-Jun-18 Analyzed: 19-Jun-18						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120	0.00	20	
Alkalinity, Total	260	10.0	mg/L	250		104	80-120	0.00	20	
Batch 8062006 - General Prep - Wet Chem										
Blank (8062006-BLK1)										
				Prepared: 20-Jun-18 Analyzed: 21-Jun-18						
Chloride	ND	4.00	mg/L							
LCS (8062006-BS1)										
				Prepared: 20-Jun-18 Analyzed: 21-Jun-18						
Chloride	100	4.00	mg/L	100		100	80-120			
LCS Dup (8062006-BSD1)										
				Prepared: 20-Jun-18 Analyzed: 21-Jun-18						
Chloride	100	4.00	mg/L	100		100	80-120	0.00	20	
Batch 8062108 - General Prep - Wet Chem										
LCS (8062108-BS1)										
				Prepared & Analyzed: 21-Jun-18						
Conductivity	97300		uS/cm	100000		97.3	80-120			
pH	7.09		pH Units	7.00		101	90-110			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 112 W. Taylor
 Hobbs NM, 88240

 Project: O-34 SWD WELL
 Project Number: SEC. 34, T20S, R37E
 Project Manager: HAYDEN HOLUB
 Fax To: (575) 397-1471

 Reported:
 26-Jun-18 11:00

Inorganic Compounds - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 8062108 - General Prep - Wet Chem

Duplicate (8062108-DUP1)		Source: H801687-01			Prepared & Analyzed: 21-Jun-18					
pH	8.00	0.100	pH Units		7.96			0.501	20	
Conductivity	26800	1.00	uS/cm		26900			0.298	20	
Resistivity	0.373		Ohms/m		0.372			0.298	20	

Batch 8062110 - General Prep - Wet Chem

Duplicate (8062110-DUP1)		Source: H801687-01			Prepared: 21-Jun-18 Analyzed: 22-Jun-18					
Specific Gravity @ 60° F	1.011	0.000	[blank]		1.012			0.131	20	

Batch 8062112 - General Prep - Wet Chem

Blank (8062112-BLK1)		Prepared: 21-Jun-18 Analyzed: 22-Jun-18								
Sulfate	ND	10.0	mg/L							
LCS (8062112-BS1)		Prepared: 21-Jun-18 Analyzed: 22-Jun-18								
Sulfate	19.0	10.0	mg/L	20.0	95.2	80-120				
LCS Dup (8062112-BSD1)		Prepared: 21-Jun-18 Analyzed: 22-Jun-18								
Sulfate	19.4	10.0	mg/L	20.0	97.2	80-120	2.13	20		


Batch 8062115 - Filtration

Blank (8062115-BLK1)		Prepared: 20-Jun-18 Analyzed: 21-Jun-18								
TDS	ND	5.00	mg/L							

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*=Accredited Analyte

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Analytical Results For:

 Rice Operating Company
 112 W. Taylor
 Hobbs NM, 88240

 Project: O-34 SWD WELL
 Project Number: SEC. 34, T20S, R37E
 Project Manager: HAYDEN HOLUB
 Fax To: (575) 397-1471

 Reported:
 26-Jun-18 11:00

Inorganic Compounds - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062115 - Filtration										
LCS (8062115-BS1)				Prepared: 20-Jun-18 Analyzed: 21-Jun-18						
TDS	456	5.00	mg/L	527		86.5	80-120			
Duplicate (8062115-DUP1)				Prepared: 20-Jun-18 Analyzed: 21-Jun-18						
		Source: H801667-03								
TDS	938	5.00	mg/L		946			0.849	20	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: O-34 SWD WELL
Project Number: SEC. 34, T20S, R37E
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
26-Jun-18 11:00

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B806183 - Total Rec. 200.7/200.8/200.2

Blank (B806183-BLK1)

Prepared: 21-Jun-18 Analyzed: 22-Jun-18

Iron	ND	0.050	mg/L							
Barium	ND	0.050	mg/L							
Potassium	ND	1.00	mg/L							
Magnesium	ND	0.100	mg/L							
Calcium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							

LCS (B806183-BS1)

Prepared: 21-Jun-18 Analyzed: 22-Jun-18

Sodium	3.22	1.00	mg/L	3.24		99.2	85-115			
Potassium	7.83	1.00	mg/L	8.00		97.8	85-115			
Magnesium	19.1	0.100	mg/L	20.0		95.6	85-115			
Iron	3.81	0.050	mg/L	4.00		95.2	85-115			
Calcium	3.83	0.100	mg/L	4.00		95.7	85-115			
Barium	2.01	0.050	mg/L	2.00		100	85-115			

LCS Dup (B806183-BSD1)

Prepared: 21-Jun-18 Analyzed: 22-Jun-18

Magnesium	19.4	0.100	mg/L	20.0		96.8	85-115	1.30	20	
Barium	2.02	0.050	mg/L	2.00		101	85-115	0.698	20	
Potassium	7.85	1.00	mg/L	8.00		98.2	85-115	0.354	20	
Calcium	3.89	0.100	mg/L	4.00		97.1	85-115	1.50	20	
Sodium	3.23	1.00	mg/L	3.24		99.7	85-115	0.493	20	
Iron	3.82	0.050	mg/L	4.00		95.6	85-115	0.400	20	

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Celey D. Keene, Lab Director/Quality Manager

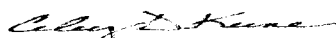
Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL LABORATORIES **SCALE INDEX WATER ANALYSIS REPORT**

Company	: RICE OPERATING COMPANY	Date Sampled	: 06/19/18
Lease Name	: O-34 SWD WELL	Company Rep.	: HAYDEN HOLUB
Well Number	: SAN ANDRES FORMATION WATER (H801687-01)		
Location	: SEC 34, T20S, R37E		

ANALYSIS

1. pH	7.96	
2. Specific Gravity @ 60/60 F.	1.0120	
3. CaCO3 Saturation Index @ 80 F.	+1.142	'Calcium Carbonate Scale Possible'
@ 140 F.	+2.012	'Calcium Carbonate Scale Possible'

Dissolved Gasses

4. Hydrogen Sulfide	ND	PPM
5. Carbon Dioxide	ND	PPM
6. Dissolved Oxygen	ND	PPM

Cations

		/	Eq. Wt.	=	MEQ/L
7. Calcium (Ca++)	561.00	/	20.1	=	27.91
8. Magnesium (Mg++)	260.00	/	12.2	=	21.31
9. Sodium (Na+)	4,950	/	23.0	=	256.23
10. Barium (Ba++)	4.910	/	68.7	=	0.07

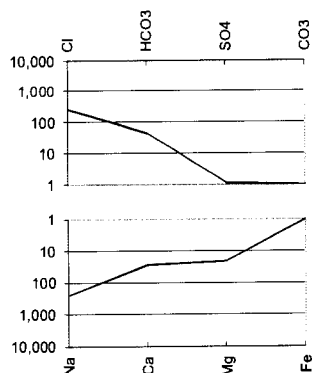
Anions

11. Hydroxyl (OH-)	0	/	17.0	=	0.00
12. Carbonate (CO3=)	0	/	30.0	=	0.00
13. Bicarbonate (HCO3-)	2,760	/	61.1	=	45.17
14. Sulfate (SO4=)	55	/	48.8	=	1.13
15. Chloride (Cl-)	9,200	/	35.5	=	259.15

Other

16. Total Iron (Fe)	0.000	/	18.2	=	0.00
17. Total Dissolved Solids	17,700				
18. Total Hardness As CaCO3	2,471.0				
19. Calcium Sulfate Solubility @ 90 F.	2,821				
20. Resistivity (Measured)	0.372	Ohm/Meters	@ 77	Degrees (F)	

Logarithmic Water Pattern



PROBABLE MINERAL COMPOSITION

COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO3)2	81.04	X	27.91	=	2,262
CaSO4	68.07	X	0.00	=	0
CaCl2	55.50	X	0.00	=	0
Mg(HCO3)2	73.17	X	17.26	=	1,263
MgSO4	60.19	X	0.00	=	0
MgCl2	47.62	X	4.05	=	193
NaHCO3	84.00	X	0.00	=	0
NaSO4	71.03	X	1.13	=	80
NaCl	58.46	X	255.10	=	14,913

ND = Not Determined

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy 1339	T. Canyon	T. Ojo Alamo	T. Penn A"
T. Salt 1430	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates 2689	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. 7 Rivers 2933	T. Devonian	T. Cliff House	T. Leadville
T. Queen 3443	T. Silurian	T. Menefee	T. Madison
T. Grayburg 3702	T. Montoya	T. Point Lookout	T. Elbert
T. San Andres 3967	T. Simpson	T. Mancos	T. McCracken
T. Glorieta 5332	T. McKee	T. Gallup	T. Ignacio Otzte
T. Paddock 5393	T. Ellenburger	Base Greenhorn	T. Granite
T. Blinbry 5729	T. Gr. Wash	T. Dakota	
T. Tubb 6469	T. Delaware Sand	T. Morrison	
T. Drinkard 6814	T. Bone Springs	T. Todilto	
T. Abo 7105	T. Tansill 2572	T. Entrada	
T. Wolfcamp	T. Penrose 3576	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to.....
No. 2, from.....to.....

No. 3, from.....to.....
No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....
 No. 2, from.....to.....feet.....
 No. 3, from.....to.....feet.....

No. 2, from.....to.....feet.....
No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology

From	To	Thickness In Feet	Lithology



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

August 06, 2018

HAYDEN HOLUB

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: P-15/D-24-N

Enclosed are the results of analyses for samples received by the laboratory on 07/27/18 16:55.

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 accredited through the State of Colorado Department of Public Health and Environment for:

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

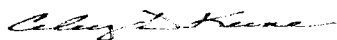
Analytical Results For:Rice Operating Company
112 W. Taylor
Hobbs NM, 88240Project: P-15/D-24-N
Project Number: P-15/D-24-N
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471Reported:
06-Aug-18 12:49

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WATER WELL TEST - 1MILE FROM F	H802058-01	Water	27-Jul-18 14:10	27-Jul-18 16:55

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 112 W. Taylor
 Hobbs NM, 88240

 Project: P-15/D-24-N
 Project Number: P-15/D-24-N
 Project Manager: HAYDEN HOLUB
 Fax To: (575) 397-1471

 Reported:
 06-Aug-18 12:49

WATER WELL TEST - 1MILE FROM P-15 & D-24-N
H802058-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories
Inorganic Compounds

Alkalinity, Bicarbonate	346		5.00	mg/L	1	8071613	AC	30-Jul-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8071613	AC	30-Jul-18	310.1	
Chloride*	88.0		4.00	mg/L	1	8073008	AC	30-Jul-18	4500-Cl-B	
Conductivity	828		1.00	uS/cm	1	8073011	AC	30-Jul-18	120.1	
pH*	8.02		0.100	pH Units	1	8073011	AC	30-Jul-18	9045	
Sulfate*	102		25.0	mg/L	2.5	8073014	AC	31-Jul-18	375.4	
TDS*	538		5.00	mg/L	1	8073010	AC	01-Aug-18	160.1	
Alkalinity, Total*	284		4.00	mg/L	1	8071613	AC	30-Jul-18	310.1	

Green Analytical Laboratories
Total Recoverable Metals by ICP (E200.7)

Calcium*	48.4		1.00	mg/L	10	B808003	AES	02-Aug-18	EPA200.7	
Magnesium*	22.6		1.00	mg/L	10	B808003	AES	02-Aug-18	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B808003	AES	02-Aug-18	EPA200.7	
Sodium*	93.1		10.0	mg/L	10	B808003	AES	02-Aug-18	EPA200.7	

Cardinal Laboratories

*=Accredited Analyte

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Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: P-15/D-24-N
Project Number: P-15/D-24-N
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
06-Aug-18 12:49

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 8071613 - General Prep - Wet Chem

Blank (8071613-BLK1)

Prepared & Analyzed: 16-Jul-18

Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	ND	5.00	mg/L							
Alkalinity, Total	ND	4.00	mg/L							

LCS (8071613-BS1)

Prepared & Analyzed: 16-Jul-18

Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	355	12.5	mg/L				80-120			
Alkalinity, Total	290	10.0	mg/L	250		116	80-120			

LCS Dup (8071613-BSD1)

Prepared & Analyzed: 16-Jul-18

Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120	11.2	20	
Alkalinity, Total	260	10.0	mg/L	250		104	80-120	10.9	20	

Batch 8073008 - General Prep - Wet Chem

Blank (8073008-BLK1)

Prepared & Analyzed: 30-Jul-18

Chloride	ND	4.00	mg/L							
----------	----	------	------	--	--	--	--	--	--	--

LCS (8073008-BS1)

Prepared & Analyzed: 30-Jul-18

Chloride	92.0	4.00	mg/L	100		92.0	80-120			
----------	------	------	------	-----	--	------	--------	--	--	--

LCS Dup (8073008-BSD1)

Prepared & Analyzed: 30-Jul-18

Chloride	100	4.00	mg/L	100		100	80-120	8.33	20	
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Batch 8073010 - Filtration

Blank (8073010-BLK1)

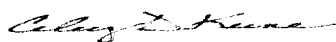
Prepared: 30-Jul-18 Analyzed: 01-Aug-18

TDS	ND	5.00	mg/L							
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: P-15/D-24-N
Project Number: P-15/D-24-N
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
06-Aug-18 12:49

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 8073010 - Filtration

LCS (8073010-BS1)

Prepared: 30-Jul-18 Analyzed: 01-Aug-18

TDS 532 5.00 mg/L 527 101 80-120

Duplicate (8073010-DUP1)

Source: H802054-01

Prepared: 30-Jul-18 Analyzed: 01-Aug-18

TDS 11100 5.00 mg/L 10900 1.46 20

Batch 8073011 - General Prep - Wet Chem

LCS (8073011-BS1)

Prepared & Analyzed: 30-Jul-18

Conductivity 484 uS/cm 500 96.8 80-120
pH 7.07 pH Units 7.00 101 90-110

Duplicate (8073011-DUP1)

Source: H802054-01

Prepared & Analyzed: 30-Jul-18

pH 7.70 0.100 pH Units 7.65 0.651 20
Conductivity 14700 1.00 uS/cm 14800 0.475 20

Batch 8073014 - General Prep - Wet Chem

Blank (8073014-BLK1)

Prepared: 30-Jul-18 Analyzed: 31-Jul-18

Sulfate ND 10.0 mg/L

LCS (8073014-BS1)

Prepared & Analyzed: 31-Jul-18

Sulfate 20.6 10.0 mg/L 20.0 103 80-120

LCS Dup (8073014-BSD1)

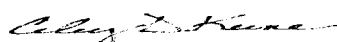
Prepared: 30-Jul-18 Analyzed: 31-Jul-18

Sulfate 20.7 10.0 mg/L 20.0 104 80-120 0.678 20

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Rice Operating Company
 112 W. Taylor
 Hobbs NM, 88240

 Project: P-15/D-24-N
 Project Number: P-15/D-24-N
 Project Manager: HAYDEN HOLUB
 Fax To: (575) 397-1471

 Reported:
 06-Aug-18 12:49

Total Recoverable Metals by ICP (E200.7) - Quality Control
Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B808003 - Total Rec. 200.7/200.8/200.2
Blank (B808003-BLK1)

Prepared & Analyzed: 01-Aug-18

Magnesium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Calcium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							

LCS (B808003-BS1)

Prepared: 01-Aug-18 Analyzed: 02-Aug-18

Sodium	3.01	1.00	mg/L	3.24		93.0	85-115			
Potassium	8.31	1.00	mg/L	8.00		104	85-115			
Calcium	4.17	0.100	mg/L	4.00		104	85-115			
Magnesium	20.4	0.100	mg/L	20.0		102	85-115			

LCS Dup (B808003-BSD1)

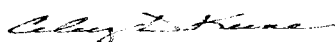
Prepared: 01-Aug-18 Analyzed: 02-Aug-18

Potassium	8.22	1.00	mg/L	8.00		103	85-115	1.12	20	
Calcium	4.14	0.100	mg/L	4.00		103	85-115	0.891	20	
Sodium	2.99	1.00	mg/L	3.24		92.2	85-115	0.902	20	
Magnesium	20.3	0.100	mg/L	20.0		102	85-115	0.634	20	

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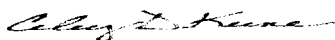
Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



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Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Rice Operations Co. Project Manager: Hayden Hobbs Address: 112 W Taylor City: Hobbs State: NM Zip: 88240 Phone #: 575-393-9174 Fax #: 575-393-1471 Project #: P-15/D-24-N Project Owner: Project Name: P-15/D-24-N Project Location: P-15/D-24-N Sample Name: Hayden Hobbs		P.O. #: Company: Attn: Address: City: State: Zip: Phone #: Fax #:	
Lab I.D. H802058 Sample I.D. Water Well Test - 1m; Review from proposed wells between P-15 + D-24-N Good well N. golf c.		BILL TO ANALYSIS REQUEST	
FOR LAB USE ONLY (G) RAB OR (C) OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER:		MATRIX PRESERV SAMPLING	
DATE 7/27 TIME 2:10 X Major cations + anions			
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Relinquished By: [Signature] Date: 7-27-18 Time: 4:55 Received By: [Signature] Date: 7-27-18 Time: 4:55		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #: REMARKS: Email results khalid@ricecard.com SUTHS@ricecard.com F-Rush	
Delivered By: (Circle One) 2282 Sampler - UPS - Bus - Other: 2282 Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/> CHECKED BY: [Signature] INITIALS: 2282			



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

August 06, 2018

HAYDEN HOLUB

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: P-15

Enclosed are the results of analyses for samples received by the laboratory on 07/27/18 16:55.

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 accredited through the State of Colorado Department of Public Health and Environment for:

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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,

A handwritten signature in black ink that reads "Coley D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

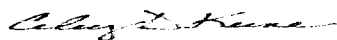
Analytical Results For:Rice Operating Company
112 W. Taylor
Hobbs NM, 88240Project: P-15
Project Number: N-11 / P-15
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471Reported:
06-Aug-18 12:56

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WATER WELL TEST - 1MILE FROM F	H802059-01	Water	27-Jul-18 13:43	27-Jul-18 16:55

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: P-15
Project Number: N-11 / P-15
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
06-Aug-18 12:56

WATER WELL TEST - 1MILE FROM P-15
H802059-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Inorganic Compounds

Alkalinity, Bicarbonate	273		5.00	mg/L	1	8071613	AC	30-Jul-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8071613	AC	30-Jul-18	310.1	
Chloride*	510		4.00	mg/L	1	8073008	AC	30-Jul-18	4500-Cl-B	
Conductivity	2660		1.00	uS/cm	1	8073011	AC	30-Jul-18	120.1	
pH*	7.51		0.100	pH Units	1	8073011	AC	30-Jul-18	9045	
Sulfate*	459		125	mg/L	12.5	8073014	AC	31-Jul-18	375.4	
TDS*	1830		5.00	mg/L	1	8073010	AC	01-Aug-18	160.1	
Alkalinity, Total*	224		4.00	mg/L	1	8071613	AC	30-Jul-18	310.1	


Green Analytical Laboratories
Total Recoverable Metals by ICP (E200.7)

Calcium*	164		1.00	mg/L	10	B808003	AES	02-Aug-18	EPA200.7	
Magnesium*	70.9		1.00	mg/L	10	B808003	AES	02-Aug-18	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B808003	AES	02-Aug-18	EPA200.7	
Sodium*	317		10.0	mg/L	10	B808003	AES	02-Aug-18	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: P-15
Project Number: N-11 / P-15
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
06-Aug-18 12:56

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 8071613 - General Prep - Wet Chem

Blank (8071613-BLK1)

Prepared & Analyzed: 16-Jul-18

Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	ND	5.00	mg/L							
Alkalinity, Total	ND	4.00	mg/L							

LCS (8071613-BS1)

Prepared & Analyzed: 16-Jul-18

Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	355	12.5	mg/L				80-120			
Alkalinity, Total	290	10.0	mg/L	250		116	80-120			

LCS Dup (8071613-BSD1)

Prepared & Analyzed: 16-Jul-18

Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	318	12.5	mg/L				80-120	11.2	20	
Alkalinity, Total	260	10.0	mg/L	250		104	80-120	10.9	20	

Batch 8073008 - General Prep - Wet Chem

Blank (8073008-BLK1)

Prepared & Analyzed: 30-Jul-18

Chloride	ND	4.00	mg/L							
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LCS (8073008-BS1)

Prepared & Analyzed: 30-Jul-18

Chloride	92.0	4.00	mg/L	100		92.0	80-120			
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LCS Dup (8073008-BSD1)

Prepared & Analyzed: 30-Jul-18

Chloride	100	4.00	mg/L	100		100	80-120	8.33	20	
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Batch 8073010 - Filtration

Blank (8073010-BLK1)

Prepared: 30-Jul-18 Analyzed: 01-Aug-18

TDS	ND	5.00	mg/L							
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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: P-15
Project Number: N-11 / P-15
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
06-Aug-18 12:56

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8073010 - Filtration										
LCS (8073010-BS1)										
					Prepared: 30-Jul-18 Analyzed: 01-Aug-18					
TDS	532	5.00	mg/L	527		101	80-120			
Duplicate (8073010-DUP1)										
					Source: H802054-01 Prepared: 30-Jul-18 Analyzed: 01-Aug-18					
TDS	11100	5.00	mg/L	10900		1.46	20			
Batch 8073011 - General Prep - Wet Chem										
LCS (8073011-BS1)										
					Prepared & Analyzed: 30-Jul-18					
Conductivity	484		uS/cm	500		96.8	80-120			
pH	7.07		pH Units	7.00		101	90-110			
Duplicate (8073011-DUP1)										
					Source: H802054-01 Prepared & Analyzed: 30-Jul-18					
pH	7.70	0.100	pH Units	7.65		0.651	20			
Conductivity	14700	1.00	uS/cm	14800		0.475	20			
Batch 8073014 - General Prep - Wet Chem										
Blank (8073014-BLK1)										
					Prepared: 30-Jul-18 Analyzed: 31-Jul-18					
Sulfate	ND	10.0	mg/L							
LCS (8073014-BS1)										
					Prepared & Analyzed: 31-Jul-18					
Sulfate	20.6	10.0	mg/L	20.0		103	80-120			
LCS Dup (8073014-BSD1)										
					Prepared: 30-Jul-18 Analyzed: 31-Jul-18					
Sulfate	20.7	10.0	mg/L	20.0		104	80-120	0.678	20	

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
112 W. Taylor
Hobbs NM, 88240

Project: P-15
Project Number: N-11 / P-15
Project Manager: HAYDEN HOLUB
Fax To: (575) 397-1471

Reported:
06-Aug-18 12:56

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B808003 - Total Rec. 200.7/200.8/200.2										
Blank (B808003-BLK1)										
Prepared & Analyzed: 01-Aug-18										
Magnesium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Calcium	ND	0.100	mg/L							
Potassium	ND	1.00	mg/L							
LCS (B808003-BS1)										
Prepared: 01-Aug-18 Analyzed: 02-Aug-18										
Sodium	3.01	1.00	mg/L	3.24		93.0	85-115			
Potassium	8.31	1.00	mg/L	8.00		104	85-115			
Calcium	4.17	0.100	mg/L	4.00		104	85-115			
Magnesium	20.4	0.100	mg/L	20.0		102	85-115			
LCS Dup (B808003-BSD1)										
Prepared: 01-Aug-18 Analyzed: 02-Aug-18										
Potassium	8.22	1.00	mg/L	8.00		103	85-115	1.12	20	
Calcium	4.14	0.100	mg/L	4.00		103	85-115	0.891	20	
Sodium	2.99	1.00	mg/L	3.24		92.2	85-115	0.902	20	
Magnesium	20.3	0.100	mg/L	20.0		102	85-115	0.634	20	

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

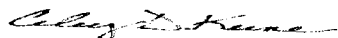
Notes and Definitions

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

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <i>Lice Operating Co.</i> Project Manager: <i>Hayden Hobbs</i> Address: <i>112 W Taylor</i> City: <i>Hobbs</i> Phone #: <i>575-393-9174</i> State: <i>NM</i> Zip: <i>88240</i> Fax #: <i>575-393-1471</i> Project #: <i>P-15</i> Project Name: <i>P-15</i> Project Location: <i>N-11 / P-15</i> Sampler Name: <i>Hayden Hobbs</i>		P.O. #: Company: Attn: Address: City: State: Phone #: Fax #:	
Lab I.D.: <i>H802059</i> Sample I.D.: <i>Water Well Test - 1 mi. North from P-15 East Chevron Yard</i>		BILL TO ANALYSIS REQUEST	
FOR LAB USE ONLY Matrix: <input checked="" type="checkbox"/> (G) RAB OR (C) JOMP <input checked="" type="checkbox"/> # CONTAINERS <input checked="" type="checkbox"/> GROUNDWATER <input type="checkbox"/> WASTEWATER <input type="checkbox"/> SOIL <input type="checkbox"/> OIL <input type="checkbox"/> SLUDGE <input type="checkbox"/> OTHER: ACID/BASE: ICE / COOL OTHER:		PRESERV SAMPLING DATE <i>7/27</i> TIME <i>11:13</i> Major cations & anions	
Relinquished By: <i>[Signature]</i> Date: <i>7-27-18</i> Time: <i>4:55</i> Received By: <i>[Signature]</i> Date: <i>7-27-18</i> Time: <i>7:28</i> Relinquished By: <i>[Signature]</i> Date: <i>7-27-18</i> Time: <i>7:28</i>		REMARKS: Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #: Sample Condition: <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact Checked By: <i>[Signature]</i> Initials: <i>[Signature]</i> Delivered By: <i>[Signature]</i> Sampler - UPS - Bus - Other: <i>Consolidated 22.75</i> 22.82 79.45	

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



August 6, 2018

Scott Curtis
Rice Operating Company
122 W Taylor St.
Hobbs, New Mexico 88240

RE: Rice Operating Company P-15 SWD Well Permit

Mr. Curtis:

Tasman Geosciences, Inc. (Tasman) conducted a hydrogeologic investigation on behalf of Rice Operating Company (Rice) related to the proposed injection well P-15 SWD well permit located in Lea County, New Mexico (Site [Figure 1]). The scope of the investigation was to determine if there is a hydrologic connection between the proposed injection interval and local sources of underground drinking water. The basis of the investigation was in response to the well permit requirement that the applicant makes the following statement:

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

During the investigation Tasman utilized three main sources to determine if there was evidence of open faults or other hydrologic connection between the injection zone, which is between 4,200 and 5,100 feet below ground surface (bgs) in the Permian-Guadalupe San Andreas Formation, and local sources of drinking water estimated to be between 50 and 150 feet bgs within the Tertiary Ogallala Formation (High Plains aquifer).

The sources utilized in the investigation are listed below and are included as attachments:

- Geologic Map of New Mexico (Anderson et al., 1996);
- Regional Cross Sections – Central Basin Platform, West Texas (Bebout et al., 1985); and
- Geohydrology of the High Plains Aquifer in Southeastern New Mexico (Hart et al., 1985).

HYDROGEOLOGIC EVALUATION AND RESULTS

Based on a review of these sources and information provided by Rice, the following lines of evidence indicates that there is not a “hydrologic connection between the disposal zone and underground sources of drinking water”.

- Approximately 4,000 feet of bedrock between the top of the injection interval and the base of the High Plains aquifer;



- Geologic map of New Mexico illustrates no major regional faults or structural features indicating a connection between the San Andreas Formation and the Ogallala Formation (High Plains aquifer);
- Cross section B-B' at points 1, 2 and 3, which are near the injection Site, indicates there are no major faults that trend vertically between the Permian San Andreas Formation and the Tertiary Ogallala Formation; and
- Plate 1 – Geohydrology of the High Plains aquifer illustrates the contact between the base of the High Plains aquifer and the underlying bedrock is approximately 65 feet bgs in the location of the injection Site.

SUMMARY

Based on these lines of evidence and as a licensed Professional Geologist, I am confident that Rice Operating Company can provide the affirmative statement:

“that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water”.

Please feel free to contact me with any questions or comments at (970) 317-0130.

Sincerely,

Brent Everett, PG
Tasman Geosciences, Inc.

Enclosures:

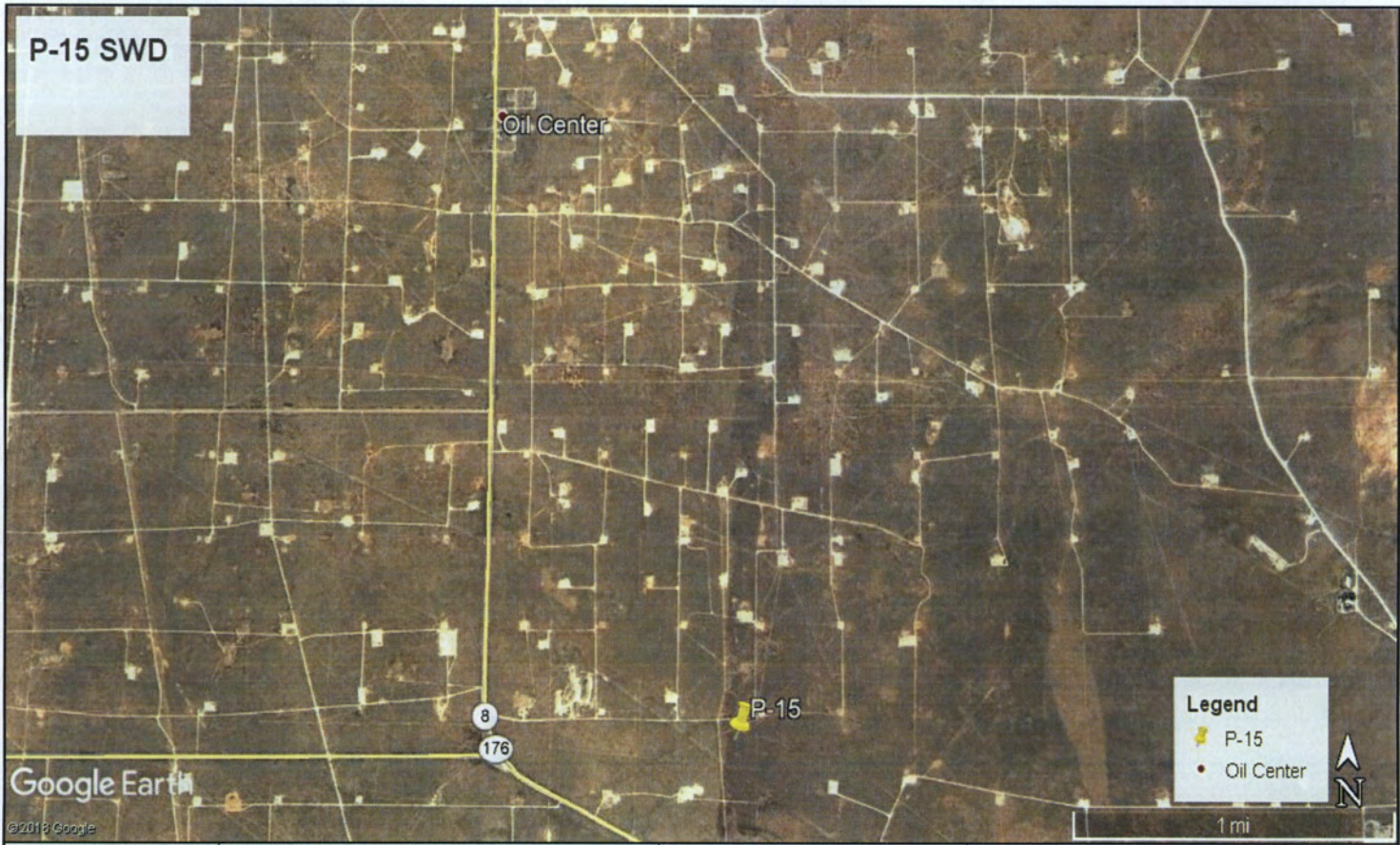
- Figure 1 – Site Location Map
- Geologic Map of New Mexico
- Cross Section Overview – Central Basin Platform, West Texas
- Regional Cross Section (B-B') – Central Basin Platform, West Texas
- Geohydrology of the High Plains Aquifer Southeast New Mexico


References:

Anderson, O.J., Jones, G.E., and Green, G.N., 1996, Geologic Map of New Mexico, Scale 1:500,000.

Bebout, D.G., and Meador, K.J., 1985, Regional Cross Sections – Central Basin Platform, West Texas: The University of Texas at Austin, Bureau of Economic Geology.

Hart, D.L., and McAda, D.P., 1985, Geohydrology of the High Plains Aquifer in Southeastern New Mexico, Hydrologic Atlas 679.



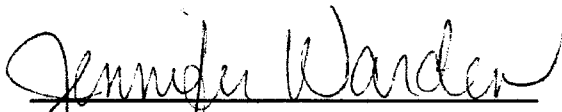
DATE: 8/5/18 DESIGNED BY: B. Everett DRAWN BY: B. Everett	 TASMAN GEOSCIENCES 6899 Pecos St. Unit C Denver, CO 80221	Rice Operating Company Proposed Injection Well P-15 Lot P, Sec. 15-T21S-R36E Lea County, New Mexico	Site Location Map	FIGURE 1
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Affidavit of Publication

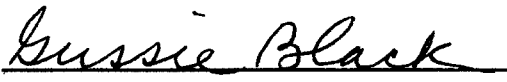
STATE OF NEW MEXICO
COUNTY OF LEA

I, Jennifer Warden, Administrative Coordinator of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
August 15, 2018
and ending with the issue dated
August 15, 2018.

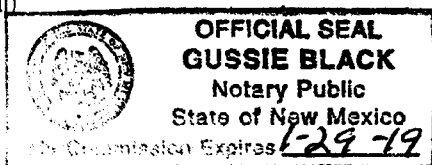

Administrative Coordinator

Sworn and subscribed to before me this
15th day of August 2018.


Business Manager

My commission expires
January 29, 2019

(Seal)



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE **August 15, 2018**

Public Notice for P-15 SWD (API:--) Rice Operating Company, 122 West Taylor, Hobbs, NM 88240 (575) 393-9174. Contact Party: Hayden Holub (575) 393-9174. The intended purpose of this injection well is for disposal of produced water associated with oil and gas production activities. This well is a permitted disposal well into the San Andres formation. This application is made to utilize the well for commercial use. The location of the well is 58 feet from the South Line and 988 feet from the East Line of Section 15, Township 21S, Range 36E, which is in the SE/4 of the SE/4 of the aforementioned section, Lea county. The formation name is the San Andres; injection intervals to be between a depth of 4,200' to 5,100'; a maximum injection rate of 45,000 barrels per day with maximum pressure of 1000 PSI, or maximum allowed by the NMOCD. Interested parties must file objections or request a hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days, by Wednesday the 29th of August.
#33122

01104367

00216462

BEGIE BONDS
RICE OPERATING COMPANY
112 WEST TAYLOR
HOBBS, NM 88240

SURFACE OWNER, GRAZING LESSEE, LEASE OWNER,
AND OFFSET OPERATORS

P-15 SWD

58' FSL AND 988' FEL, SEC. 15, T21S, R36E

LEA COUNTY, NM

Surface Owner of Well Site

State of New Mexico
Commissioner of Public Lands
Attention: Faith Crosby
PO Box 1148
Santa Fe, NM 87504

Chevron USA, Inc.
Attention: Linda McMurry
6301 Deauville Blvd.
Midland, TX 79706

ConocoPhillips Company
Attention: Susan Maunder
600 N Dairy Ashford Rd.
Office EC3-10-W285
Houston, TX 77079

Dasco Cattle Co
PO Box 727
Hobbs, NM 88241

City of Eunice
PO Box 147
Eunice, NM 88231

Laymond Smith
PO Box 269
Eunice, NM 88231

Grazing Lessee of Well Site

Lease #GTS-2121-0100
Dasco Cattle Company
PO Box 727
Hobbs, NM 88241

Operators of Record

Chevron USA, Inc.
Attention: Linda McMurry
6301 Deauville Blvd.
Midland, TX 79706

XTO Energy, Inc.
Attention: DeeAnn Kemp
6401 Holiday Hill Rd., #5
Hobbs, NM 88241

Penroc Oil Corp
Attention: Mohammed Merchant
PO Box 2769
Hobbs, NM 88241

Occidental Permian
Attention: Kelley Montgomery
PO Box 4294
Houston, TX 77210-4294

Horseshoe Operating
Attention: Colby Welch
110 W Louisiana
Midland, TX 79701

Oil & Gas Lessees of Record

Chevron USA, Inc.
Attention: Linda McMurry
6301 Deauville Blvd.
Midland, TX 79706

ZPZ Delaware I, LLC
Attention: Peggy Clark
2000 Post Oak Blvd.
STE. #100
Houston, TX 77056

ConocoPhillips Co.
Attention: Susan Maunder
600 N Dairy Ashford Rd.
Office EC3-10-W285
Houston, TX 77079

Occidental Permian
Attention: Kelley Montgomery
PO Box 4294
Houston, TX 77210-4294

Exxon Mobil Corp
Attention: Liz Tindol
PO Box 4358
Houston, TX 77210

RICE Operating Company

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

AUGUST 16, 2018

State of New Mexico
Commissioner of Public Lands
PO Box 1148
Santa Fe, NM 87504

RE: P-15 SWD
U/L P, Section 15, T21S, R36E
58' FSL and 988' FEL
Lea County, NM

To Whom it May Concern:

In accordance with the Rules and Regulations of the Oil Conservation Division of the State of New Mexico, you are being provided a copy of the C-108 Application for Authorization to Inject into the above captioned well.

Any questions about the permit can be directed to Hayden Holub at 575-393-9174. Any objections or request for hearing must be filed with the Oil Conservation Division within fifteen (15) days from the date received. The OCD address is 1220 S. St. Francis Dr., Santa Fe, NM 87505.

Thank You,



Hayden Holub
Manager
Rice Operating Company

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Commissioner of Public Lands	
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RICE Operating Company

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

AUGUST 16, 2018

Chevron USA, Inc.
Attention: Linda McMurry
6301 Deauville Blvd.
Midland, TX 79706

RE: P-15 SWD
U/L P, Section 15, T21S, R36E
58' FSL and 988' FEL
Lea County, NM

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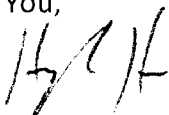
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Thank You,



Hayden Holub
Manager
Rice Operating Company

RICE Operating Company

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

AUGUST 16, 2018

ConocoPhillips Company
Attention: Susan Maunder
600 N Dairy Ashford Rd.
Office EC3-10-W285
Houston, TX 77079

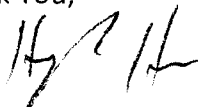
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Thank You,



Hayden Holub
Manager
Rice Operating Company

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RICE Operating Company

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

AUGUST 16, 2018

Dasco Cattle Company
PO Box 727
Hobbs, NM 88241

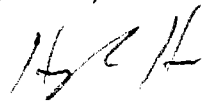
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Thank You,


Hayden Holub
Manager
Rice Operating Company

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RICE Operating Company

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

AUGUST 16, 2018

XTO Energy, Inc.
Attention: DeeAnn Kemp
6401 Holiday Hill Rd., Bldg. #5
Midland, TX 79707

RE: P-15 SWD
U/L P, Section 15, T21S, R36E
58' FSL and 988' FEL
Lea County, NM

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Thank You,



Hayden Holub
Manager
Rice Operating Company

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RICE Operating Company

112 West Taylor • Hobbs, New Mexico 88240

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

AUGUST 16, 2018

Penroc Oil Corp.

Attention: Mohammed Merchant

PO Box 2769

Hobbs, NM 88241

RE: P-15 SWD

U/L P, Section 15, T21S, R36E

58' FSL and 988' FEL

Lea County, NM

7017 0530 0001 0372 9032

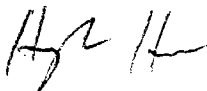
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\$	PO Box 2769
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Thank You,



Hayden Holub

Manager

Rice Operating Company

RICE Operating Company

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

AUGUST 16, 2018

Occidental Permian
Attention: Kelley Montgomery
PO Box 4294
Houston, TX 77210-4294

RE: P-15 SWD
U/L P, Section 15, T21S, R36E
58' FSL and 988' FEL
Lea County, NM

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Thank You,



Hayden Holub
Manager
Rice Operating Company

RICE Operating Company

112 West Taylor • Hobbs, New Mexico 88240

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

AUGUST 16, 2018

Horseshoe Operating
Attention: Colby Welch
110 W Louisiana
Midland, TX 79701

RE: P-15 SWD
U/L P, Section 15, T21S, R36E
58' FSL and 988' FEL
Lea County, NM

7017 0530 0001 0372 9056

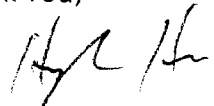
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Postage \$ 2.89	
Horseshoe Operating, Inc. Attention: Colby Welch 110 W. Louisiana Midland, TX 79701	
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\$ 9.09	
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Thank You,


Hayden Holub
Manager
Rice Operating Company

RICE Operating Company

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

AUGUST 16, 2018

City of Eunice
PO Box 147
Eunice, NM 88231

RE: P-15 SWD
U/L P, Section 15, T21S, R36E
58' FSL and 988' FEL
Lea County, NM

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☐ Adult Signature Required \$
☐ Adult Signature Restricted Delivery \$
Postage \$ 2.89
To: City of Eunice
PO Box 147
Eunice, NM 88231
\$9.09

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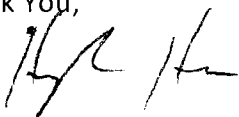
9-02-000-9047 See Reverse for Instructions

To Whom it May Concern:

In accordance with the Rules and Regulations of the Oil Conservation Division of the State of New Mexico, you are being provided a copy of the C-108 Application for Authorization to Inject into the above captioned well.

Any questions about the permit can be directed to Hayden Holub at 575-393-9174. Any objections or request for hearing must be filed with the Oil Conservation Division within fifteen (15) days from the date received. The OCD address is 1220 S. St. Francis Dr., Santa Fe, NM 87505.

Thank You,


Hayden Holub
Manager
Rice Operating Company

AUGUST 6, 2018

RICE Operating Company

112 West Taylor • Hobbs, New Mexico 88240

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

AUGUST 16, 2018

Laymond Smith
PO Box 269
Eunice, NM 88231

RE: P-15 SWD
U/L P, Section 15, T21S, R36E
58' FSL and 988' FEL
Lea County, NM

7017 0530 0001 0372 9018

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Laymond Smith PO Box 269 Eunice, NM 88231	
Postmark Here #9.09	
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Thank You,



Hayden Holub
Manager
Rice Operating Company

RICE Operating Company

112 West Taylor • Hobbs, New Mexico 88240

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

AUGUST 16, 2018

ZPZ Delaware I, LLC
Attention: Peggy Clark
2000 Post Oak Blvd.
STE. #100
Houston, TX 77056

RE: P-15 SWD
U/L P, Section 15, T21S, R36E
58' FSL and 988' FEL
Lea County, NM

To Whom it May Concern:

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Hayden Holub
Manager
Rice Operating Company

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<input type="checkbox"/> Adult Signature Restricted Delivery \$	
Postage \$ 2.89	
ZPZ Delaware I, LLC Attention: Peggy Clark 2000 Post Oak Blvd. STE. #100 Houston, TX 77056	
9047 See Reverse for Instructions	

RICE Operating Company

112 West Taylor • Hobbs, New Mexico 88240

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

AUGUST 16, 2018

Exxon Mobil Corp.
Attention: Liz Tindol
PO Box 4358
Houston, TX 77210-4358

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<input type="checkbox"/> Return Receipt (electronic)	\$	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$	3.45
<input type="checkbox"/> Adult Signature Required	\$	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$	
Postage	\$	2.89
Tot	\$	\$9.09

Postmark Here

Exxon Mobil Corp
Attention: Liz Tindol
PO Box 4358
Houston, TX 77210-4358

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

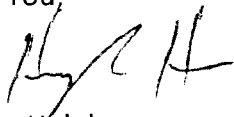
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Thank You


Hayden Holub
Manager
Rice Operating Company

wellname	api	township	range	formation	tds_mgl
EUNICE MONUMENT SOUTH UNIT #260	3002504463	21S	36E	GRAYBURG/SAN ANDRES	13534
A J ADKINS #008	3002520700	21S	36E	BLINEBRY	147118
ANTELOPE RIDGE UNIT #003	3002521082	23S	34E	DEVONIAN	80187
BELL LAKE UNIT #009	3002520261	23S	34E	BONE SPRING	204652
NORTHEAST DRINKARD UNIT #306	3002506507	21S	37E	BLINEBRY/TUBB/DRINKARD	19094.4
BELLOQ 2 STATE #002H	3001542895	23S	31E	WOLFCAMP	119471.8
NORTH PURE GOLD 5 FEDERAL #003H	3001535892	23S	31E	DELAWARE-BRUSHY CANYON	278201.6
WASHINGTON 33 STATE #024	3001530334	17S	28E	GLORIETA/YESO	206471



FORM C-108 Technical Review Summary [Prepared by reviewer and included with application; V16.2]

DATE RECORD: First Rec: _____ Admin Complete: _____ or Suspended: _____ Add. Request/Reply: _____

ORDER TYPE: WFX / PMX / SWD Number: _____ Order Date: _____ Legacy Permits/Orders: _____

Well No. #1 Well Name(s): P-15

API: 30-0 25-Pending Spud Date: TBD New or Old (EPA): N (UIC Class II Primacy 03/07/1982)

Footages 58FSL 58FEL Lot _____ or Unit P Sec 15 Tsp 215 Rge 36E County LEC

General Location: 4 miles NW Pool: SUN, San Andres Pool No.: 96121

BLM 100K Map: SA 1 Operator: Rice Operating OGRID: 01917 Contact: HARDEN HOLLY Operations

COMPLIANCE RULE 5.9: Total Wells: 19 Inactive: 0 Fincl Assur: OK Compl. Order N/A IS 5.9 OK? X Date: _____

WELL FILE REVIEWED ☐ Current Status: PROPOSED

WELL DIAGRAMS: NEW: Proposed ☒ or RE-ENTER: Before Conv. ☐ After Conv. ☐ Logs in Imaging: _____

Planned Rehab Work to Well: _____

Well Construction Details	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement Ex or Cf	Cement Top and Determination Method
Planned ___ or Existing ___ Surface	<u>12 1/4 / 13 3/4</u>	<u>1300</u>	<u>850</u>	<u>SURFACE / VIS</u>
Planned ___ or Existing ___ Interm/Prod	<u>12 1/4 / 5 5/8</u>	<u>5100</u>	<u>3300</u>	<u>SURFACE / VIS</u>
Planned ___ or Existing ___ Interm/Prod				
Planned ___ or Existing ___ Prod/Liner				
Planned ___ or Existing ___ Liner				
Planned ___ or Existing ___ OH (PERF)	<u>4200 / 5100</u>			

Injection Lithostratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops	Completion/Operation Details:
Adjacent Unit: Litho. Struc. Por.		<u>SA</u>	<u>3567</u>	Drilled TD <u>5100</u> PBTD _____
Confining Unit: Litho. Struc. Por.		<u>G-1</u>	<u>5332</u>	NEW TD _____ NEW PBTD _____
Proposed Inj Interval TOP:				NEW Open Hole <input type="radio"/> or NEW Perfs <input checked="" type="radio"/>
Proposed Inj Interval BOTTOM:				Tubing Size <u>5 1/2</u> in. Inter Coated? _____
Confining Unit: Litho. Struc. Por.				Proposed Packer Depth <u>4195</u> ft
Adjacent Unit: Litho. Struc. Por.				Min. Packer Depth <u>4100</u> (100-ft limit)
				Proposed Max. Surface Press. <u>100</u> psi
				Admin. Inj. Press <u>840</u> (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P _____ Noticed? _____ BLM Sec Ord ☐ WIPP ☐ Noticed? _____ Salt/Salado T: 1400 B: 2700 NW: Cliff House fm _____

FRESH WATER: Aquifer OG-1-119 Max Depth _____ HYDRO AFFIRM STATEMENT By Qualified Person ☒

NMOSE Basin: CAPITAN CAPITAN REEF: thru _____ adj NA No. GW Wells in 1-Mile Radius? 3 FW Analysis? X

Disposal Fluid: Formation Source(s) _____ Analysis? X On Lease ☐ Operator Only ☐ or Commercial ☒

Disposal Interval: Inject Rate (Avg/Max BWPD): 26.4K/4570 Protectable Waters? N/A Source: _____ Systems Closed or Open

HC Potential: Producing Interval? N/A Formerly Producing? _____ Method: Logs/DST/P&A/Other _____ 2-Mi Radius Pool Map ☐

AOR Wells: 1/2-M Radius Map and Well List? _____ No. Penetrating Wells: _____ [AOR Horizontals: _____ AOR SWDs: _____]

Penetrating Wells: No. Active Wells 0 Num Repairs? _____ on which well(s)? _____ Diagrams? _____

Penetrating Wells: No. P&A Wells 0 Num Repairs? _____ on which well(s)? _____ Diagrams? _____

NOTICE: Newspaper Date 8-15-2018 Mineral Owner NMSLO Surface Owner MUSTY N. Date 8-16-2018

RULE 26.7(A): Identified Tracts? X Affected Persons: CHURCH, CONNOR, H. 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100 N. Date 8-16-2018

Order Conditions: Issues: WATER ANALYSIS, PERF THE INJECTION INTERVAL

Additional COAs: Along w/ CHSING FLOWING INTERVAL