

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED  
OMB No. 1004-0135  
Expires July 31, 1996

**SUNDRY NOTICES AND REPORTS ON WELLS**

**Do not use this form for proposals to drill or reenter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

**SUBMIT IN TRIPLICATE - Other instructions on reverse side**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

**LRE OPERATING, LLC**

3a. Address c/o Mike Pippin LLC

3104 N. Sullivan, Farmington, NM 87401

3b. Phone No. (include area code)

505-327-4573

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1650' FNL & 990' FWL Unit E

Sec. 29, T17S, R28E

**RECEIVED**

**JAN 29 2014**

**NMOC D ARTESIA**

5. Lease Serial No.

**NMLC-046250-B**

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.

**WILLIAMS B FEDERAL #1**

3

**30-015-35627**

10. Field and Pool, or Exploratory Area

Artesia, Glorieta-Yeso (96830)

Red Lake, San Andres (97253)

AND

Eddy County, New Mexico

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize <input type="checkbox"/> Deepen <input type="checkbox"/> Production (Start/Resume) <input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing <input type="checkbox"/> Fracture Treat <input type="checkbox"/> Reclamation <input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair <input type="checkbox"/> New Construction <input type="checkbox"/> Recomplete <input checked="" type="checkbox"/> Other DHC
	<input type="checkbox"/> Change Plans <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Temporarily Abandon
	<input type="checkbox"/> Convert to Injection <input type="checkbox"/> Plug Back <input type="checkbox"/> Water Disposal

13. Describe Proposed or Completed Operations (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

LRE requests administrative approval to downhole commingle the existing Artesia, Glorieta-Yeso (96830) and the existing Red Lake, San Andres (97253). Both intervals have common ownership (Category 1), we have not experienced any significant cross flows, & all the fluids are compatible. Downhole commingling will maximize the ultimate recovery of oil & gas, eliminate redundant surface equipment, & maximize productivity. The State has approved this commingling with order DHC-4631. DHC will be accomplished by drilling out the CBP @ 3220'. The production allocations for the lower zone (Yeso) are 6% oil, 12% gas, & 14% water. The allocations for the upper zone (San Andres) are 94% oil, 88% gas, & 86% water. See the attached calculations, Downhole Comminling Worksheet, supporting data, and the Williams A & B Field Study of Yeso & San Andres.

**SUBJECT TO LIKE  
APPROVAL BY STATE**

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed)

**Mike Pippin**

Title

**Petroleum Engineer (Agent)**

Signature

*Mike Pippin*

Date

**November 20, 2013**

**THIS SPACE FOR FEDERAL OR STATE USE**

Approved by

Title

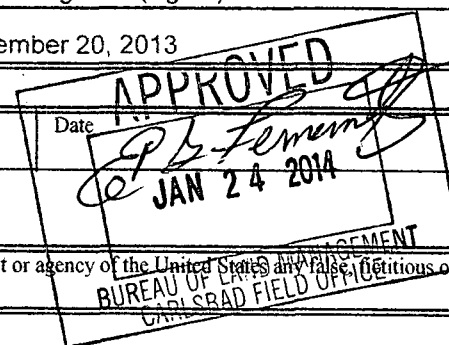
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Accepted for record  
NMOC D

JAN 29 2014



# WILLIAMS B FEDERAL #1

Current 11/21/13

Artesia; Glorieta-Yeso

Red Lake; San Andres

API#: 30-015-35627

(E) Section 29, T-17-S, R-28-E, Eddy County, NM

Spud: 6/21/07

12-1/4" hole

Yeso Completed: 8/15/07

San Andres Completed: Soon

Yates @ 628'

7 Rivers @ 740'

Queen @ 1044'

Grayburg @ 1432'

San Andres @ 1834'

Glorieta @ 3220'

Yeso @ 3334'

8-5/8" 24# Csg @ 457'  
Cmt w/375 sx  
Circ 130 sx cmt to Surface

2-7/8" tubing @ 3167'

San Andres Perfs: 2052'-3200'

CBP @ 3320'

Yeso Perfs: 3233'-3503'

PBTD 3530'

7-7/8" hole

TD 3575'

5-1/2" 15.5# Csg @ 3564'  
Cmt with 850 sx  
Circ 16 sx cmt to Surface

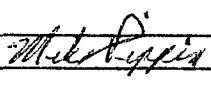
M. Pippin

## DOWNHOLE COMMINGLING WORKSHEET

Operator: LRE OPERATING, LLC  
 Lease/Well Name/API#/Location: NMLC-046250-B, WILLIAMS B FEDERAL #1, 30-015-35627, E SEC 29 T17S R28E  
 Date: 11/21/2013

Data	Bottom Formation	Upper Formation	Estimated Combined Production Data
Pool Name:	Artesia, G-Y	Red Lake, SA	
Pool Code:	96830	97253	
State Form C-102 w/dedicated Acres provided:	Yes 40 acres	Yes 40 acres	
Formation Name:	Yeso	San Andres	
Top & Bottom of Pay Section (Perfed or OH interval):	3233'-3503' Perfed	2052'-3201' Perfed	
Method of Production:	Pumping	Pumping	
Bottom Hole Pressure:	851 psi	690 psi	
Reservoir Drive Mechanism:	Solution gas drive	Solution gas drive	
Oil Gravity &/or BTU:	35.8 / 1295	34.1 / 1222*	34.2 / 1231
Average Sulfur Content (Wt%):	1.003	1.2355*	1.2213
Oil Sample Analysis Provided:	Yes	Yes*	
Gas Analysis Provided:	Yes	Yes*	
Produce Water Analysis Provided:	Yes	Yes*	
H2S Present:	9500 ppm	4000 ppm*	4633 ppm
Producing, Shut-in or New Zone:	SI	Pumping	
Date & Oil/Gas/Water rates of Last Production (new zones or no production history Operator shall attach production estimate & supporting data):	3 BOPD 15 MCF/D 22 BWPD	46 BOPD 111 MCF/D 131 BWPD	Estimated Rates: 50 BOPD 130 MCF/D 153 BWPD
Average decline % (provide back up data):	OIL = 9.76% GAS = 1.57%	OIL = 9.51% GAS = 5.89%	OIL = 8.59% GAS = 1.91%
Fixed Allocation %:	OIL = 6% GAS = 12% WTR = 14%	OIL = 94% GAS = 88% WTR = 86%	

Remarks: See attached back-up data & "Williams A & B Field Study of Yeso & San Andres".

Operator Signature:   
 Date: 11/21/2013

### Attached Supporting Documents

State Form C-102 w/dedicated Acres Provided  
 Oil Sample Analysis Provided (Must be Current)  
 Gas Analysis provided (Must be Current)  
 Produce Water Analysis provided (Must be Current)  
 Any additional supporting data (i.e. offset well production & decline curves etc.)

\* FROM SUBJECT WELL

LRE OPERATING, LLC  
**WILLIAMS B FEDERAL #1**  
Artesia; Glorieta-Yeso & Red Lake, San Andres  
E Section 29 T17S R28E  
11/21/2013 – Mike Pippin  
API#: 30-015-35627

## Commingle Allocation Calculations

This well was originally completed in the Yeso on 8/15/07. On 8/6/13, this well was recompleted from the Yeso to the San Andres. Before the workover, on June 12, 2013, the lower zone (Yeso) tested for 3 BOPD, 15 MCF/D & 22 BWPD from Yeso perms 3233'-3503'.

Following the workover the new and upper zone (San Andres) was tested on 8/22/13 for 46 BOPD, 111 MCF/D, & 131 BWPD from San Andres perms 2052'-3201'.

Therefore, the total oil (commingled) should be:  $3 + 46 = \underline{49 \text{ BOPD}}$ .  
The total gas (commingled) should be  $15 + 111 = \underline{126 \text{ MCF/D}}$ .  
The total water (commingled) should be  $22 + 131 = \underline{153 \text{ BWPD}}$

### RECOMMENDED NEW OIL ALLOCATION

$$\% \text{ Lower Zone} = \frac{3}{49} = \underline{6\%}$$

$$\% \text{ Upper Zone} = \frac{46}{49} = \underline{94\%}$$

### RECOMMENDED NEW GAS ALLOCATION

$$\% \text{ Lower Zone} = \frac{15}{126} = \underline{12\%}$$

$$\% \text{ Upper Zone} = \frac{111}{126} = \underline{88\%}$$

### RECOMMENDED NEW WATER ALLOCATION

$$\% \text{ Lower Zone} = \frac{22}{153} = \underline{14\%}$$

$$\% \text{ Upper Zone} = \frac{131}{153} = \underline{86\%}$$

LRE OPERATING, LLC  
**WILLIAMS B FEDERAL #1**  
Artesia; Glorieta-Yeso & Red Lake, San Andres  
E Section 29 T17S R28E  
11/20/2013 – Mike Pippin  
API#: 30-015-35627

## WEIGHTED AVERAGES

### OIL GRAVITY:

Bottom zone (Yeso) = 3 BOPD, 35.8

Upper zone (SA) = 46 BOPD, 34.1

$$(3 \times 35.8) + (46 \times 34.1) = 107.4 + 1568.6 = 1676$$

$$1676 / (3 + 46) = \underline{\mathbf{34.2 \text{ GRAVITY OIL}}}$$

### GAS BTU:

Bottom zone (Yeso) = 15 MCF/D, 1295 BTU

Upper zone (SA) = 111 MCF/D, 1222 BTU

$$(15 \times 1295) + (111 \times 1222) = 19425 + 135,642 = 155,067$$

$$155,067 / (15 + 111) = \underline{\mathbf{1231 \text{ BTU GAS}}}$$

### H2S in GAS:

Bottom zone (Yeso) = 15 MCF/D, 9500 ppm

Upper zone (SA) = 111 MCF/D, 4000 ppm

$$(15 \times 9500) + (111 \times 4000) = 586.500$$

$$586.500 / (15 + 111) = \underline{\mathbf{4633 \text{ ppm H2S}}}$$

### Sulfur in Oil:

Bottom zone (Yeso) = 3 BOPD, 1.003

Upper zone (SA) = 46 BOPD, 1.2355

$$(3 \times 1.003) + (46 \times 1.2355) = 3.009 + 56.83 = 59.842$$

$$59.842 / (3 + 46) = \underline{\mathbf{1.2213 \text{ Wt\% Sulfur}}}$$

District I  
1625 N. French Drive, Hobbs, NM 88240

District II  
1301 W. Grand Avenue, Artesia, NM 88210

District III  
1000 Rio Brazos Road, Aztec, NM 87410

District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

Form C-107A  
Revised June 10, 2003

APPLICATION TYPE

☒ Single Well  
Establish Pre-Approved Pools  
EXISTING WELLBORE  
☒ Yes ☐ No

APPLICATION FOR DOWNHOLE COMMINGLING

Operator LRE OPERATING, LLC c/o Mike Pippin LLC (agent), 3104 N. Sullivan, Farmington, NM 87401  
Address

Lease WILLIAMS B FEDERAL #1 Well No. E SEC. 29 T17S R28E Unit Letter-Section-Township-Range Eddy County

OGRID No. 281994 Property Code 309867 API No. 30-015-35627 Lease Type: ☒ Federal ☐ State ☐ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	RED LAKE; -San Andres		ARTESIA: Glorieta-Yeso
Pool Code	97253		96830
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	2052'-3201'		3233'-3503'
Method of Production (Flowing or Artificial Lift)	Pumping		Plan to Pump
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)	690 psi		851 psi
Oil Gravity or Gas BTU (Degree API or Gas BTU)	34.1		34.8
Producing, Shut-In or New Zone	Producing		SI Below CBP
Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.)	Date: 8/22/13 RATES: 46 BOPD 111 MCD/D 131 BWPD	Date: Rates:	Date: 6/12/13 Rates: 3 BOPD 15 MCF/D 22 BWPD
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil Gas 94% 88%	Oil Gas % %	Oil Gas 6% 12%

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes ☒ No ☐  
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes ☐ No ☐

Are all produced fluids from all commingled zones compatible with each other? Yes ☒ No ☐

Will commingling decrease the value of production? Yes ☐ No ☒

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands  
or the United States Bureau of Land Management been notified in writing of this application? Yes ☒ No ☐

NMOCD Reference Case No. applicable to this well: \_\_\_\_\_

Attachments:

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:  
List of other orders approving downhole commingling within the proposed Pre-Approved Pools  
List of all operators within the proposed Pre-Approved Pools  
Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.  
Bottomhole pressure data.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Mike Pippin TITLE Petroleum Engineer - Agent DATE November 21, 2013

TYPE OR PRINT NAME Mike Pippin TELEPHONE NO. ( 505 ) 327-4573

E-MAIL ADDRESS mike@pippinllc.com

**District I**

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State of New Mexico

Energy, Minerals &amp; Natural Resources Department

**OIL CONSERVATION DIVISION**

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number 30-015-35627	<sup>2</sup> Pool Code 97253	<sup>3</sup> Pool Name Red Lake, San Andres
<sup>4</sup> Property Code 309867	<sup>5</sup> Property Name <b>WILLIAMS B FEDERAL</b>	<sup>6</sup> Well Number <b>1</b>
<sup>7</sup> OGRID No. 281994	<sup>8</sup> Operator Name <b>LRE OPERATING, LLC</b>	<sup>9</sup> Elevation 3607' GL

**<sup>10</sup> Surface Location**

UL or lot no.	Section	Township	Range	Lot 1dn	Feet from the	North/South line	Feet from the	East/West line	County
E	29	17-S	28-E		1650	NORTH	990'	WEST	EDDY

**<sup>11</sup> Bottom Hole Location If Different From Surface**

UL or lot no.	Section	Township	Range	Lot 1dn	Feet from the	North/South line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres 40	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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.

	<b><sup>17</sup> OPERATOR CERTIFICATION</b> 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 undivided 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 <u>Mike Pippin</u> Date <u>5/27/13</u> Printed Name <u>Mike Pippin</u>
	<b><sup>18</sup> SURVEYOR CERTIFICATION</b> 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. 9/11/06 Date of Survey Signature and Seal of Professional Surveyor: <u>Dan R. Reddy</u> 5412 Certificate Number

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1301 W. Grand Avenue, Artesia, NM 88210

**District III**

1600 Rio Brazos Rd., Aztec, NM 87410

**District IV**

1220 S. St. Francis Dr., Santa Fe, NM 87505

## State of New Mexico

Energy, Minerals &amp; Natural Resources Department

## OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015-35627	<sup>2</sup> Pool Code 96830	<sup>3</sup> Pool Name Artesia, Glorieta-Yeso
<sup>4</sup> Property Code 309867	<sup>5</sup> Property Name WILLIAMS B FEDERAL	<sup>6</sup> Well Number 1
<sup>7</sup> OGRID No. 281994	<sup>8</sup> Operator Name LRE OPERATING, LLC	<sup>9</sup> Elevation 3607' GL

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot 1dn	Feet from the	North/South line	Feet from the	East/West line	County
E	29	17-S	28-E		1650	NORTH	990'	WEST	EDDY

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot 1dn	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres 40	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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.

	<sup>17</sup> <b>OPERATOR CERTIFICATION</b> 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 in 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: <u>Mike Pippin</u> Date: <u>12/29/11</u> Printed Name: <u>Mike Pippin</u>	
	<sup>18</sup> <b>SURVEYOR CERTIFICATION</b> 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 of Survey: <u>9/11/00</u> Signature and Seal of Professional Surveyor: <u>Dan R. Reddy</u> Certificate Number: <u>5412</u>	



# Analytical Report



## CRUDE OIL ANALYSIS REPORT

Company: Limerock Exploration Date Tested: September 25, 2013  
Attn: Steve Tigert Formation: \_\_\_\_\_  
Lease: Williams B Analysis #: 28916  
Well: 1 SA  
Field: \_\_\_\_\_  
County: \_\_\_\_\_ Date Sampled: September 16, 2013  
State: \_\_\_\_\_ Sample Source: \_\_\_\_\_

% Oily Constituents: 92.18% API Gravity: 34.1

Cloud Point, °F: 70

% Asphaltenes: 1.79% Pour Point, °F: <0

% Paraffins: 6.03%

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Analyst: James Spruill

Date: 9/25/2013

Wildcat Measurement Service  
P.O.Box 1836  
416 East Main Street  
Artesia, NM 88211-1836

9/17/2013 3:07 PM  
Phone: 575-746-3481  
888-421-9453  
Fax: 575-748-9852  
dnorman@wildcatms.com

### GAS ANALYSIS REPORT

Analysis For: LRE OPERATING, L.L.C.

Field Name:

Well Name: WILLIAMS "B" FEDERAL #1 SA

Station Number:

Purpose: SPOT-FROM WELLHEAD

Sample Deg. F: 60.0

Volume/Day:

Formation: SAN ANDRES

Line PSIG: 70.0

Line PSIA: 83.2

Run No: 2130917-04

Date Run: 09/17/2013

Date Sampled: 09/16/2013

Producer: LRE OPERATING, L.L.C.

County: EDDY

State: NM

Sampled By: MIKE DUNN

Atmos Deg. F: 81

Pressure Base: 14.730

Real BTU Dry: 1222.349

Real BTU Wet: 1201.129

Calc. Ideal Gravity: 0.7917

Calc. Real Gravity: 0.7945

Field Gravity:

Standard Pressure: 14.696

Ideal BTU Dry: 1214.828

Ideal BTU Wet: 1193.690

Z Factor: 0.9961

Average Mol Weight: 22.9305

Average CuFt/Gal: 55.1530

26 lb. Product: 0.8861

Ethane+ GPM: 6.2362

Propane+ GPM: 2.8465

Butane+ GPM: 1.2633

Pentane+ GPM: 0.5728

#### GAS COMPONENTS

		MOL%	GPM
Oxygen	O2:	0.0000	
Carbon Dioxide	CO2:	4.0886	
Nitrogen	N2:	3.4646	
Hydrogen Sulfide H2S:		0.4000	
Methane	C1:	70.0220	
Ethane	C2:	12.6780	3.3897
Propane	C3:	5.7481	1.5832
Iso-Butane	IC4:	0.6736	0.2204
Nor-Butane	NC4:	1.4917	0.4702
Iso-Pentane	IC5:	0.3780	0.1382
Nor-Pentanes	NC5:	0.3357	0.1217
Hexanes Plus	C6+:	0.7197	0.3129
Totals		100.0000	6.2362

#### Remarks:

H2S IN GAS STREAM ON LOCATION: 0.4000% = 4,000 PPM

Analysis By: Don Norman

# Reef Services Analytical Report



**REEF**

Company: LRE Operating  
Source: wellhead  
Number: LRE001  
County: Eddy

Location:  
Date Sampled:  
Salesman:  
Formation:

Williams B-1 *SA*  
Sept 16 2013  
Steve Tigert

## ANALYSIS

	mg/L	EQ. WT.	MEQ/L
1. pH	6.80		
2. Specific Gravity 60/60 F	1.147		
3. Hydrogen Sulfide	30.0 PPM		
4. Carbon Dioxide	240.0 PPM		
5. Dissolved Oxygen	ND		
6. Hydroxyl (OH <sup>-</sup> )	0 /	17.0 =	0.00
7. Carbonate (CO <sub>3</sub> <sup>-2</sup> )	0 /	30.0 =	0.00
8. Bicarbonate (HCO <sub>3</sub> <sup>-</sup> )	916 /	61.1 =	14.99
9. Chloride (Cl <sup>-</sup> )	117,973 /	35.5 =	3,323.18
10. Sulfate (SO <sub>4</sub> <sup>-2</sup> )	2,800 /	48.8 =	57.38
11. Calcium (Ca <sup>+2</sup> )	2,600 /	20.1 =	129.35
12. Magnesium (Mg <sup>+2</sup> )	419 /	12.2 =	34.34
13. Sodium (Na <sup>+</sup> )	74,333 /	23.0 =	3,231.86
14. Barium (Ba <sup>+2</sup> )	ND		
15. Total Iron (Fe)	nd		
16. Manganese	3.00		
17. Strontium	ND		

18. Total Dissolved Solids 199,044

19. Resistivity @ 75 °F (calculated) 0.04 Ω-m

## 20. CaCO<sub>3</sub> Saturation Index

@ 80 °F	0.3395
@ 100 °F	0.6495
@ 120 °F	0.9095
@ 140 °F	1.2695
@ 160 °F	1.6195

## PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X	MEQ/L	= mg/L
Ca(HCO <sub>3</sub> ) <sub>2</sub>	81.04		14.99	1,215
CaSO <sub>4</sub>	68.07		57.38	3,906
CaCl <sub>2</sub>	55.50		56.98	3,162
Mg(HCO <sub>3</sub> ) <sub>2</sub>	73.17		0.00	0
MgSO <sub>4</sub>	60.19		0.00	0
MgCl <sub>2</sub>	47.62		34.34	1,635
NaHCO <sub>3</sub>	84.00		0.00	0
NaSO <sub>4</sub>	71.03		0.00	0
NaCl	58.46		3,231.86	188,935

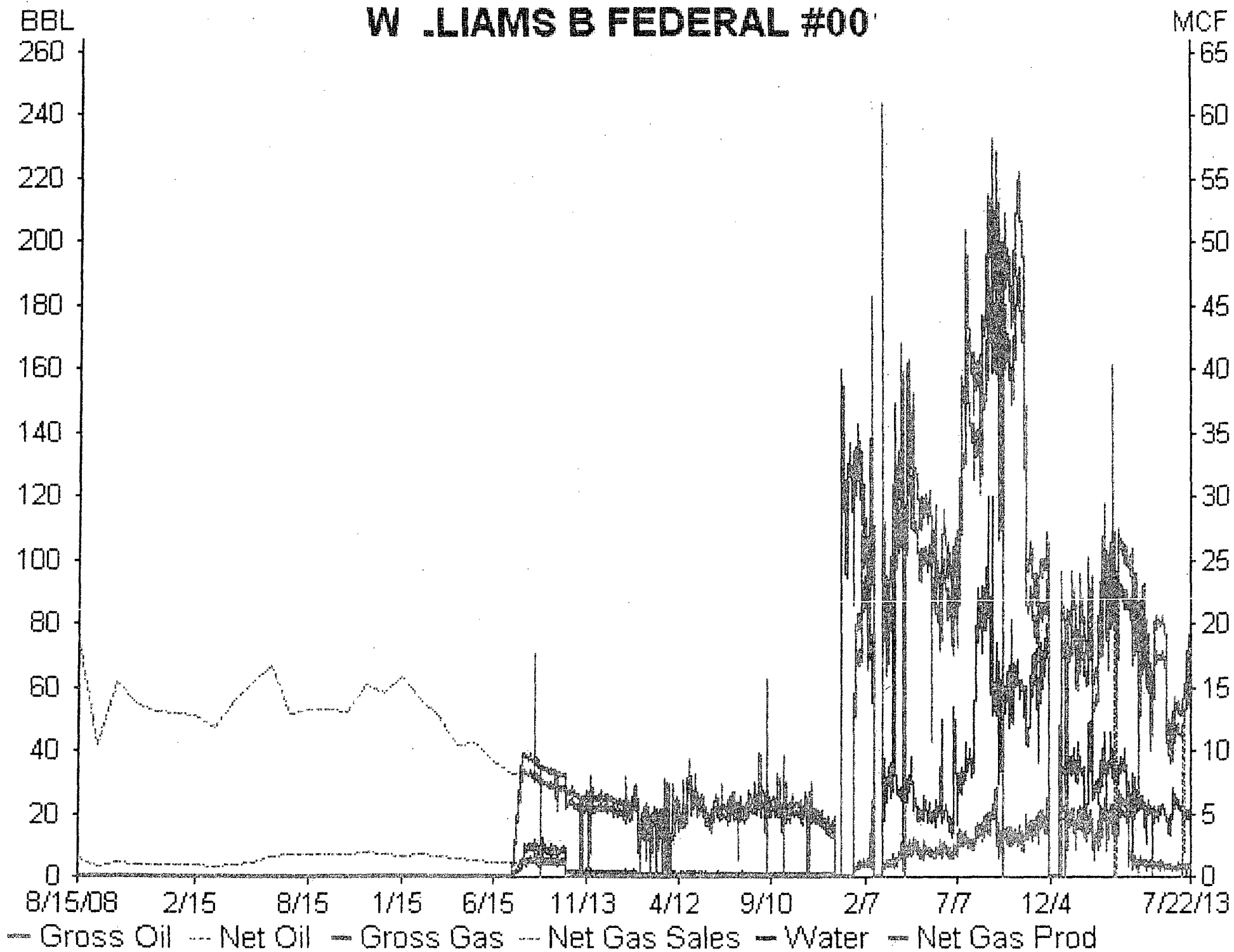
## 21. CaSO<sub>4</sub> Supersaturation Ratio

@ 70 °F	0.7170
@ 90 °F	0.7173
@ 110 °F	0.7191
@ 130 °F	0.7190
@ 150 °F	0.7154

Analyst: Steve Tigert

Date: Sept 16 2013

# W .LIAMS B FEDERAL #00



State of New Mexico  
Energy, Minerals and Natural Resources Department

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**Susana Martinez**  
Governor

**David Martin**  
Cabinet Secretary-Designate

**Brett F. Woods, Ph.D.**  
Deputy Cabinet Secretary

**Jami Bailey, Division Director**  
Oil Conservation Division



Administrative Order DHC-4631

Order Date: August 27, 2013

Application Reference Number: pAXK1320558313

LRE Operating, LLC  
1111 Bagby Street, Suite 4600  
Houston, TX 77002

Attention: Mike Pippin

	Williams B Federal Well No. 1		
	API No: 30-015-35627		
	Unit E, Section 29, Township 17 South, Range 28 East, NMPM		
Pool	RED LAKE: SAN ANDRES	Oil	97253
Names:	ARTESIA: GLORIETA-YESO	Oil	96830

Reference is made to your recent application for an exception to 19.15.12.9A. NMAC of the Division Rules and Regulations to permit the above-described well to commingle production from the subject pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of 19.15.12.11A. NMAC, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion or otherwise required separation of the zones is hereby placed in abeyance.

In accordance with 19.15.12.11A.(6) NMAC, the production attributed to any commingled pool within the well shall not exceed the allowable applicable to that pool.

As per the application, the assignment of allowable and allocation of production from the well shall be based on the subtraction method. The total well production minus the Artesia, Glorieta-Yeso Pool production shall be assigned to the Red Lake, San Andres Pool. The final production allocation percentages of oil and gas between these pools shall be supplied to the Division's district II office within 60 days following completion of this well or workover.


**REMARKS:** The operator shall notify the Division's district II office upon implementation of commingling operations.

This Order is subject to like approval from the United States Bureau of Land Management.

Administrative Order DHC-4631  
LRE Operating, LLC  
August 27, 2013  
Page 2 of 2

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Pursuant to 19.15.12.11B NMAC, the commingling authority granted herein may be rescinded by the Division Director if conservation is not being best served by such commingling.

  
JAMI BAILEY  
Director

JB/prg

cc: Oil Conservation Division – Artesia District Office  
Bureau of Land Management – Carlsbad Office