

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED  
OMB No 1004-0137  
Expires March 31, 2007

JUN 29 2011

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

Lease Serial No  
NMSF-078772  
6. If Indian, Allottee or Tribe Name  
Farmington Field Office  
Bureau of Land Management

**SUBMIT IN TRIPLICATE – Other instructions on page 2.**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Williams Production Company, LLC

3a. Address

PO Box 640 Aztec, NM 87410

3b. Phone No (include area code)

505-634-4208

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

Sur 255' FSL & 1870' FEL – BHL-1980' FSL & 1300' FEL, sec 4, T31N, R6W

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

8. Well Name and No.  
Rosa Unit COM #60C

9. API Well No  
30-045-34213

10. Field and Pool or Exploratory Area  
Blanco Mesaverde/Basin Dakota

11. Country or Parish, State  
San Juan

**12. CHECK THE 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 Cement change
	<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 Operation. 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 recomplate 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 must 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 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Williams plans to change the production casing cement design as per attached proposal. This change has been given verbal approval per Troy Salyer, BLM and Charlie Perrin, NMOCD.

**CONDITIONS OF APPROVAL**

Adhere to previously issued stipulations.

**BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS**

\* Submit copy of CBL to this office

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

Name (Printed/Typed)

Larry Higgins

Title Permit Supervisor

Signature

*Larry Higgins*

Date 6/29/11

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

*Troy L Salyer*

Title PE

Date 7/1/2011

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 FFO

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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

(Instructions on page 2)

NMOCD

**HALLIBURTON**

**Williams Production Company Ebus  
Do Not Mail- 521 South Boston  
Tulsa, Oklahoma 74103**

Rosa Unit 60C

Rio Arriba County, New Mexico  
United States of America  
API/UWI 3004534213

## **Foam Cement Proposal**

Prepared for: Gary Sizemore

June 26, 2011  
Version: 1

Submitted by:  
Hap Pinkerton  
Halliburton  
601 S Boulder Suite 300  
Tulsa, Oklahoma 74119  
918.581.5213

**HALLIBURTON**

Well Name: Rosa Unit

Well #: 60C

Intermediate Casing	0 - 4439 ft (MD)
Outer Diameter	7.000 in
Inner Diameter	6.366 in
Linear Weight	23 lbm/ft
Casing Grade	J-55

Production Open Hole	4439 - 8832 ft (MD)
Inner Diameter	6.250 in
Job Excess	30 %

Production Casing	0 - 8832 ft (MD)
Outer Diameter	4.500 in
Inner Diameter	4.000 in
Linear Weight	11.60 lbm/ft
Casing Grade	N-80

Mud Weight	9 lbm/gal
BHCT	140 degF

**Calculations****Foam Production Casing**

Spacer:

$$\begin{aligned} 1015.41 \text{ ft} * 0.1106 \text{ ft}^3/\text{ft} * 0 \% &= 112.29 \text{ ft}^3 \\ \text{Total Spacer} &= 112.29 \text{ ft}^3 \\ &= 20.00 \text{ bbl} \end{aligned}$$

Cement : (4224.42 ft fill)

$$\begin{aligned} 200.00 \text{ ft} * 0.1106 \text{ ft}^3/\text{ft} * 0 \% &= 22.12 \text{ ft}^3 \\ 4024.42 \text{ ft} * 0.1026 \text{ ft}^3/\text{ft} * 30 \% &= 536.81 \text{ ft}^3 \\ \text{Total Lead Cement} &= 558.93 \text{ ft}^3 \\ &= 99.55 \text{ bbl} \\ \text{Sacks of Cement} &= 252 \text{ sks} \end{aligned}$$

Cement : (368.58 ft fill)

$$\begin{aligned} 368.58 \text{ ft} * 0.1026 \text{ ft}^3/\text{ft} * 30 \% &= 49.16 \text{ ft}^3 \\ \text{Tail Cement} &= 49.16 \text{ ft}^3 \\ &= 8.76 \text{ bbl} \end{aligned}$$

Shoe Joint Volume: (80.00 ft fill)

$$\begin{aligned} 80.00 \text{ ft} * 0.0873 \text{ ft}^3/\text{ft} &= 6.98 \text{ ft}^3 \\ &= 1.24 \text{ bbl} \\ \text{Tail plus shoe joint} &= 56.15 \text{ ft}^3 \\ &= 10.00 \text{ bbl} \\ \text{Total Tail} &= 39 \text{ sks} \end{aligned}$$

Total Pipe Capacity:

$$\begin{aligned} 8832.00 \text{ ft} * 0.0873 \text{ ft}^3/\text{ft} &= 770.74 \text{ ft}^3 \\ &= 137.27 \text{ bbl} \end{aligned}$$

Displacement Volume to Shoe Joint:

$$\begin{aligned} \text{Capacity of Pipe - Shoe Joint} &= 137.27 \text{ bbl} - 1.24 \text{ bbl} \\ &= 136.03 \text{ bbl} \end{aligned}$$

## **Job Recommendation**

## **Foam Production Casing**

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### Fluid Instructions

Fluid 1: Water Based Spacer

Gelled Water

0.2 gal/bbl LGC-36 UC (Gelling Agent)

Fluid Density: 8.40 lbm/gal

Fluid Volume: 20 bbl

### Fluid 2: Foamed Lead Cement

50/50 Poz Standard

0.15 % HALAD-766 (Low Fluid Loss Control)

0.2 % Versaset (Thixotropic Additive)

1.5 % FDP-C760-04 (Foamer)

6.621 Gal/sk Fresh Water (Mixing Fluid)

Fluid Weight 13 lbm/gal

Slurry Yield: 1.43 ft<sup>3</sup>/sk

Total Mixing Fluid: 6.76 Gal/sk

Top of Fluid: 4239 ft

Calculated Fill: 4224.42 ft

Volume: 99.55 bbl

Calculated Sacks: 252.42 sks

Proposed Sacks: 260 sks

### Fluid 3: Tail Cement

50/50 Poz Standard

0.15 % HALAD-766 (Low Fluid Loss Control)

0.2 % Versaset (Thixotropic Additive)

6.75 Gal/sk Fresh Water (Mixing Fluid)

Fluid Weight 13 lbm/gal

Slurry Yield: 1.43 ft<sup>3</sup>/sk

Total Mixing Fluid: 6.75 Gal/sk

Top of Fluid: 8463.42 ft

Calculated Fill: 368.58 ft

Volume: 10 bbl

Calculated Sacks: 39.27 sks

Proposed Sacks: 40 sks

### Fluid 4: Water Spacer

Water Displacement

Fluid Density: 8.34 lbm/gal

Fluid Volume: 136.03 bbl

**Detailed Pumping Schedule**

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate bbl/min	Downhole Volume
1	Spacer	Spacer	8.4		20 bbl
2	Cement	Lead Cement	13.0		260 sks
3	Cement	Tail Cement	13.0		40 sks
4	Spacer	Displacement Fluid	8.3		136.03 bbl

**Foam Output Parameter Summary:**

Fluid #	Fluid Name	Unfoamed Liquid Volume	Beginning Density lbm/gal	Ending Density lbm/gal	Beginning Rate scf/bbl	Ending Rate scf/bbl
<b>Stage 1</b>						
2	Foamed Lead Cement	2.60bbl	9.0	9.0	343.8	360.0

**Foam Design Specifications:**

Foam Calculation Method: Constant Density  
Backpressure: 14 psig  
Bottom Hole Circulating Temp: 140 degF  
Mud Outlet Temperature: 100 degF

Calculated Gas = 33594.5 scf  
Additional Gas = 40000 scf  
Total Gas = 73594.5 scf