Form 3160-3
(September 2001)

RECEIVED
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Bureau of Land Management
Farmington Field Office

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.: NMSF-078769

6 If Indian, Allottee or Tribe Name:

1a. Type of Work: ☒ DRILL ☐ REENTER

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

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other Single Zone X Multiple Zone

8 Lease Name and Well No: Rosa Unit No 189A

2 Name of Operator: Williams Production Company, LLC

9. API Well No.: 30-039-30969

3a. Address: P O. Box 640 Aztec, NM 87410

3b. Phone No *(include area code)*: (505) 634-4208

10 Field and Pool, or Exploratory: Blanco MV / Basin MC / Basin DK

4 Location of Well *(Report location clearly and in accordance with any State requirements *)*

At surface: 455' FSL & 2340' FEL

At proposed prod zone:

11. Sec , T , R , M , or Blk. and Survey or Area: O Section 21, 31N, 5W

14 Distance in miles and direction from nearest town or post office*: approximately 31 miles northeast of Blanco, New Mexico

12. County or Parish: Rio Arriba

13. State: NM

| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig unit line, if any) | 16 No. of Acres in lease | 17. Spacing Unit dedicated to this well |
|---|---|---|
| 455' | 2,560.0 | 320.0 – (E/2) |
| **18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.** | **19 Proposed Depth** | **20. BLM/BIA Bond No on file** |
| 75' Rosa 262A | 8,714' | UT0899 |
| **21. Elevations (Show whether DF, KDB, RT, GL, etc )** | **22. Approximate date work will start*** | **23. Estimated duration** |
| 6,795' GR | April 1, 2010 | 1 month |

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

## 24. Attachments

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

RCVD APR 6 '10
OIL CONS. DIV.
DIST. 3

| 25. Signature | Name *(Printed/Typed)* | Date |
|---|---|---|
| Larry Higgins | Larry Higgins | 1-20-10 |

Title: Drilling COM

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| Title: AFM | Office: FFO | 4/5/2010 |

Application approval 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.
Conditions of approval, if any, are attached.

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 reverse)*

Williams Production Company, LLC, proposes to develop the Blanco MV / Basin MC / Basin DK formations at the above described location in accordance with the attached drilling and surface use plans.

The surface is under Jurisdiction of the Carson National Forest, Jicarilla Ranger District.

NOTIFY AZTEC OCD 24 HRS. PRIOR TO CASING & CEMENT

This location has been archaeologically surveyed by La Plata Archaeological Consultants. Copies of their report have been submitted directly to the CNF.

A rerouted access road of 200 feet will be required for this proposed well.

This APD is also serving as an application to obtain a pipeline right-of-way. An associated pipeline tie of 42.1 feet would be required for this well

APR 0 8 2010

NMOCD

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

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 & Natural Resources Department

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

Form C-102
Revised October 12, 2005
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| [1] API Number | [2] Pool Code | [3] Pool Name | |
|---|---|---|---|
| 30-039-30909 | 97232 / 72319 / 71599 | BASIN MANCOS / BLANCO MESAVERDE / BASIN DAKOTA | |
| [4] Property Code | [5] Property Name | | [6] Well Number |
| 17033 | ROSA UNIT | | 189A |
| [7] OGRID No. | [8] Operator Name | | [9] Elevation |
| 120782 | WILLIAMS PRODUCTION COMPANY | | 6795' |

## [10] Surface Location

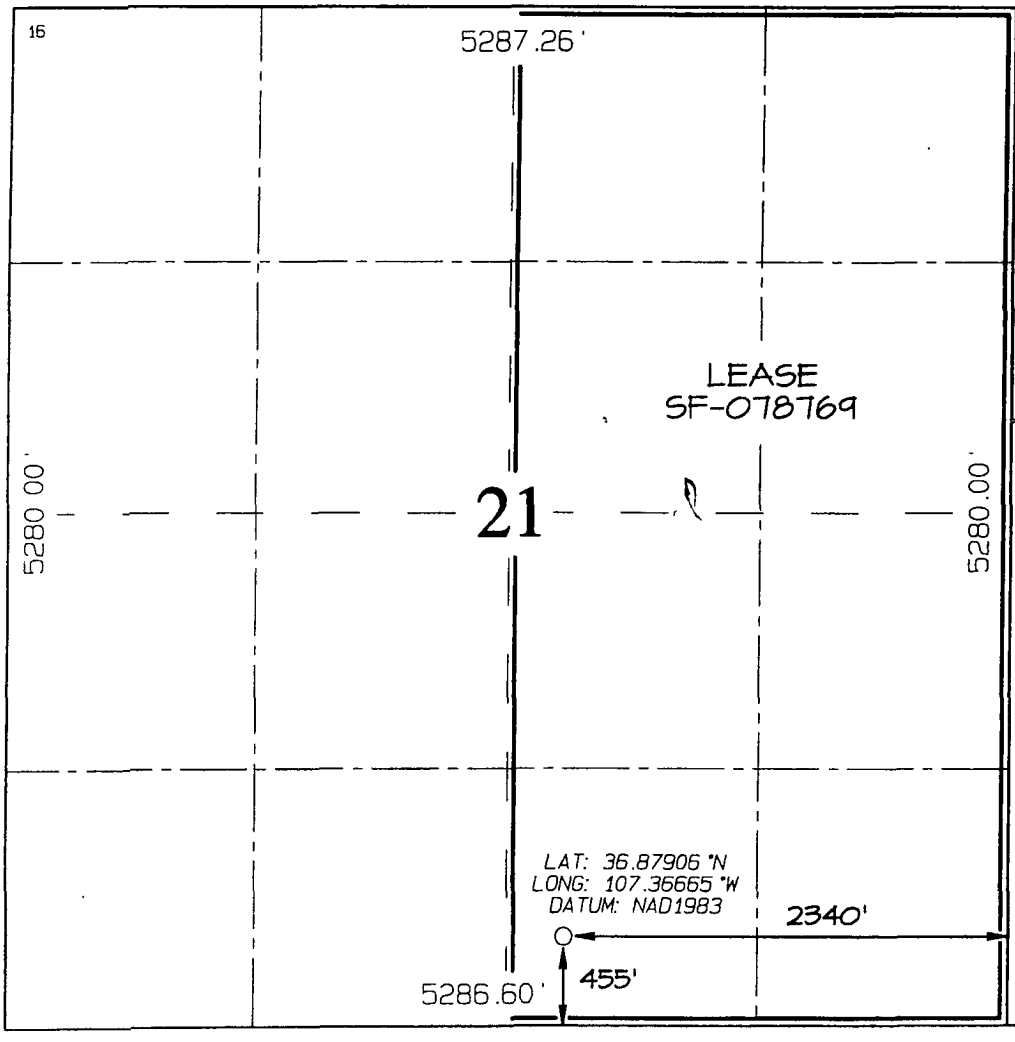
| UL or lot no | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| O | 21 | 31N | 5W | | 455 | SOUTH | 2340 | EAST | RIO ARRIBA |

## [11] 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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No |
|---|---|---|---|
| 320.0 Acres - (E/2) | | | R-13200-A |

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




## [17] 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.

Larry Higgins 1-20-10
Signature Date

LARRY HIGGINS
Printed Name

## [18] 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 Revised: JANUARY 12, 2010
Survey Date: SEPTEMBER 27, 2007

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

# WILLIAMS PRODUCTION COMPANY

## *Operations Plan*

*(Note: This procedure will be adjusted on site based upon actual conditions)*

| | | | |
|---|---|---|---|
| **DATE:** | 11/10/2009 | **FIELD:** | Basin DK/ Basin MC/BlancoMV |
| **WELL NAME:** | Rosa #189A | **SURFACE:** | USFS |
| **BH LOCATION:** | SWSE Sec 21-31N-5W<br>Rio Arriba, NM | **MINERALS:** | BLM |
| **ELEVATION:** | 6,795' GR | **LEASE #** | SF-078769 |
| **MEASURED DEPTH:** | **8,714'** | | |

I. I. **GEOLOGY:** Surface formation - San Jose

A. **FORMATION TOPS:** ( KB)

| Name | MD | Name | MD |
|---|---|---|---|
| Ojo Alamo | 2,964 | Point Lookout | 6,139 |
| Kirtland | 3,064 | Mancos | 6,449 |
| Fruitland | 3,489 | Gallup | 7,449 |
| Pictured Cliffs | 3,699 | Greenhorn | 8,169 |
| Lewis | 3,999 | Graneros | 8,224 |
| Cliff House | 5,889 | Dakota | 8,354 |
| Menefee | 5,934 | Morrison | 8,614 |
| | | **TD** | **8,714** |

B. **MUD LOGGING PROGRAM:** Mudlogger on location from Int csg to TD. Mud logger to pick TD.

C. **LOGGING PROGRAM:** AIT from surface csg to TD. LDT/CNL over intervals of interest

D. **NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. **DRILLING**

A. **MUD PROGRAM: MUD PROGRAM:** Use Water + Gel/Polymer sweeps to drill Surface hole. Convert to a LSLD - EZ-MUD system mud (+/-50 Vis.) to drill 9-7/8 in. Intermediate Hole. Increase vis to +/-60 to run Casing. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses. Use Air , Air Hammer and 6-3/4 in. Flat btm. bit to drill-out of 7-5/8 in. csg. and to TD well at +/- 8,714 ft. (MD).

B. **BOP TESTING:** While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **All tests and inspections will be recorded in the tour book as to time and results.**

## III. MATERIALS

### A. CASING PROGRAM:

| CASING TYPE | OH SIZE (IN) | DEPTH (MD) (FT) | CASING SIZE (IN) | WEIGHT(LB) | GRADE |
|---|---|---|---|---|---|
| Surface | 14 3/4 | 300 | 10 3/4 | 40.5 | K-55 |
| Intermediate | 9 7/8 | 4,174 | 7 5/8 | 26.4 | K-55 |
| Longstring | 6 3/4 | 8,714 | 4 1/2 | 11.6 | N-80 |

### B. FLOAT EQUIPMENT:

1. SURFACE CASING: 10 3/4" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.

2. INTERMEDIATE CASING: 7 5/8" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) Turbulent centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) Turbulent centralizer at 2,700 ft., 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. **(NTL-FRA 90-1).**

3. PRODUCTION LINER / CASING: 5-1/2" whirler type cement nose guide shoe with a latch collar on top of 20' bottom joint. Place marker joint above 5,400'. Place centralizers as needed across selected production intervals.

### C. CEMENTING:

***(Note: Volumes may be adjusted onsite due to actual conditions)***

1. SURFACE: Slurry: 290sx (521 cu.ft.) of "Type III" + 2% Cal-Seal 60 + ¼ # of poly-e-flake/sk + 0.3% Versaset + 2% Econolite + 6% Salt (Yield = 1.796 cu.ft./sk, Weight = 13.5 #/gal.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 1500psi.

2. INTERMEDIATE: Lead - 535 sx (1461 cu.ft.) of "EXTENDACEM" + 5 #/sk pheno-seal + 5% Cal-Seal 60 (Yield = 2.723 cu.ft./sk, Weight = 11.5 #/gal.). Tail - 100 sx (117.8cu.ft.) of Premium cement + 0.125 #/sk Poly-E-Flake, (Yield = 1.178 cu.ft./sk, Weight = 15.6#/gal.). **NO EXCESS PUMP AS WRITTEN SHOULD CIRCULATE TO SURFACE** Total volume = 1578 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface

3. PRODUCTION CASING. 10 bbl Gelled Water spacer. Cement: 605 sx (846 $ft^3$) of "FRACCEM" + 0.8% Halad-9 + 0.1% CFR-3 + 5 #/sk Gilsonite + 0.125 #/sk Poly-E-Flake + 0.15% HR-800. (Yield =1.398 $ft^3$/sk, Weight = 13 1 #/gal.). Displace cement at a minimum of 8 BPM. **NO EXCESS SHOULD COVER 150 FEET INTO 7-5/8" CASING** Total volume (846) $ft^3$. WOC 12 hours.

## IV. IV COMPLETION

### A. CBL

1. Run Cement Bond Log across all intervals to be perforated and find Top of Cement behind all casing strings if cement not circulated to surface..

### B. PRESSURE TEST

1. Pressure test 4-1/2" casing to 6000 psi max, hold at 1500 psi for 30 minutes.

## C. STIMULATION

1. Stimulate Dakota with approximately 5000# 100 mesh sand and 120,000# Ottawa Sand in slick water.
2. Isolate Dakota with a RBP.
3. Perforate Mancos as determined from the open hole logs
4. Stimulate Mancos with 2 stages of approximates 5000# 100 mesh sand and 150,000# 40/70 Ottawa sand
5. Stimulate Point Lookout with approximately 40,000# 20/40 Ottawa sand in slick water.
6. Isolate Point Lookout with a RBP.
7. Perforate the Menefee/Cliff House as determined from the open hole logs.
8. Stimulate with approximately 40,000# 20/40 Ottawa sand in slick water.
9. Test each zone before removing bridge plugs.

## D. RUNNING TUBING

1. *Production Tubing:* Run 2-3/8", 4.7#, J-55, EUE tubing with a SN (1.91" ID) on top of bottom joint. Land tubing approximately 25' above the bottom Point Lookout perforation

For Brian Alleman
Drilling Engineer

# Well Control Equipment Schematic for 2M Service

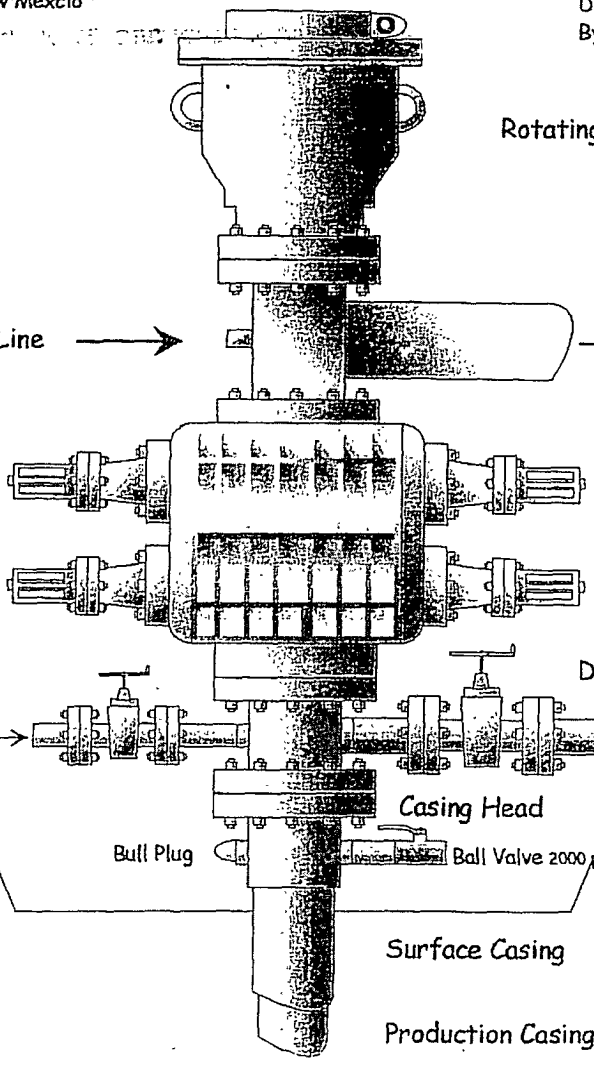
Attachment to Drilling Technical Program

## Exhibit #1
## Typical BOP setup

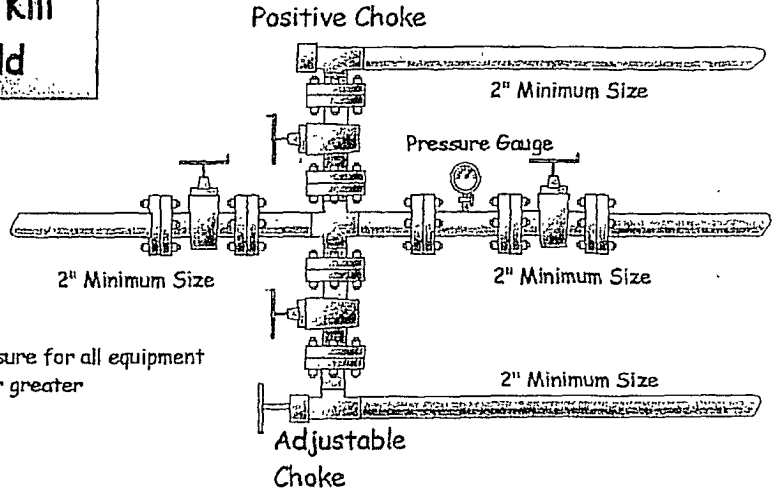
Location: San Juan Basin, New Mexcio

Date: August 20, 2001
By: John Thompson (Walsh E&P)

**BOP Stack**




**Choke & Kill Manifold**




Working Pressure for all equipment is 2,000 psi or greater