

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5. Lease Serial No. **SF-078765**  
6. If Indian, Allottee or Tribe Name, Dist. **S. DM. DIST. 3**

1a. Type of Work: ☒ DRILL ☐ REENTER

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

2. Name of Operator

Williams Production Company, LLC

3a. Address

P.O. Box 640 Aztec, NM 87410

3b. Phone No. (include area code)

(505) 634-4208

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

At surface 1635' FSL & 2580' FEL

At proposed prod. zone 2310' FSL & 1650' FEL

14. Distance in miles and direction from nearest town or post office\*

approximately 26 miles northeast of Blanco, New Mexico

15. Distance from proposed\*  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. unit line, if any)

1635'

16. No. of Acres in lease

2,460.23

17. Spacing Unit dedicated to this well

320.00 (E/2)

18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft.

50'

19. Proposed Depth

3,587'

20. BLM/BIA Bond No. on file

UT0847

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

6,386' GR

22. Approximate date work will start\*

August 1, 2006

23. Estimated duration

1 month

24. Attachments

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.

25. Signature

*Larry Higgins*

Name (Printed/Typed)

Larry Higgins

Date

6-20-06

Title

Drilling COM

Approved by (Signature)

*[Signature]*  
AFM

Name (Printed/Typed)

Office

FFO

Date

8/14/06

Title

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 Exploration and Production Company, LLC, proposes to drill a well to develop the Basin Fruitland Coal formation at the above described location in accordance with the attached drilling and surface use plans.

The surface is under jurisdiction of the Bureau of Land Management, Farmington Field Office (BLM/FFO).

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

This APD is also serving as an application to obtain a pipeline right-of-way (ROW) grant. A 148.60-foot pipeline tie would be required for this location, to be operated by Williams Field Services.

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

HOLD C104 FOR directional  
survey

NMOCD

This action is subject to technical and  
procedural review pursuant to 43 CFR 3185.3  
and appeal pursuant to 43 CFR 3185.4

District I  
PO Box 1980, Hobbs, NM 88241-1980

District II  
PO Drawer DD, Artesia, NM 88211-0719

District III  
1000 Rio Brazos Rd., Aztec, NM 87410

District IV  
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

Form C-102  
Revised February 21, 1994  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number <b>30-045-33804</b>		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 235A
*GRID No 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6386'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	9	31N	6W		1635	SOUTH	2580	EAST	SAN JUAN

<sup>11</sup> 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
J	9	31N	6W		2310	SOUTH	1650	EAST	SAN JUAN

<sup>12</sup> Dedicated Acres 320.0 Acres - (E/2)	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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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

<p><sup>16</sup></p> <p>5270.76'</p> <p>5280.00'</p> <p>2638.68'</p> <p>2310'</p> <p>1635'</p> <p>2580'</p> <p>1650'</p> <p>1144.9'</p> <p>N53°52.2'E</p> <p>LEASE SF-078765</p> <p>BOTTOM-HOLE LAT: 36.91318°N LONG: 107.46482°W DATUM: NAD1983</p> <p>SURFACE LOCATION LAT: 36.91133°N LONG: 107.46801°W DATUM: NAD1983</p>	<p><sup>17</sup> OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</p> <p><i>Larry Higgins</i> Signature</p> <p>LARRY HIGGINS Printed Name</p> <p>DRILLING Title</p> <p>6-20-06 Date</p> <p><sup>18</sup> SURVEYOR CERTIFICATION</p> <p>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</p> <p>Survey Date: JANUARY 6, 2006</p> <p>Signature and Seal of Professional Surveyor</p> <p> JASON C. EDWARDS Certificate Number 15269</p>
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Submit 3 Copies To Appropriate District  
Office  
District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Ave., 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

Form C-103  
May 27, 2004

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

WELL API NO. <b>30-045-33804</b>
5. Indicate Type of Lease FEDERAL <input checked="" type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. SF-078765
7. Lease Name or Unit Agreement Name Rosa Unit
8. Well Number 235A
9. OGRID Number 120782
Basin Fruitland Coal

SUNDRY NOTICES AND REPORTS ON WELLS  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

2. Name of Operator  
Williams Production Company, LLC

3. Address of Operator  
P.O. Box 640 Aztec, NM 87410

4. Well Location

Unit Letter J: 1635 feet from the south line and 2580 feet from the east line

Section 9 Township 31N Range 6W NMPM County San Juan

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
6,386' GR

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type reserve Depth to Groundwater >100' Distance from nearest fresh water well >1,000' Distance from nearest surface water >1,000'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Drilling/Completion pit to be located approximately 50 to 75 feet from well head. Pit multi-use drilling and completion to avoid additional site disturbance and pit will be considered out of service once production tubing set. Pit to be constructed, operated and closed in accordance with NMOCD guidelines and Williams procedures.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

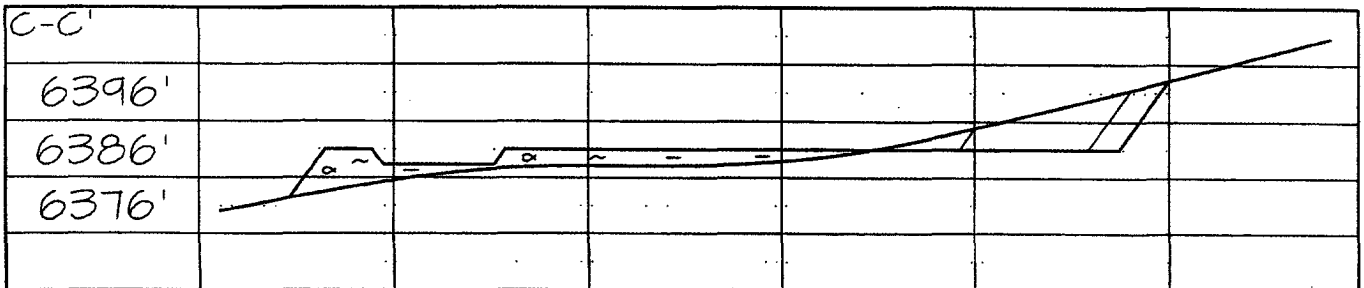
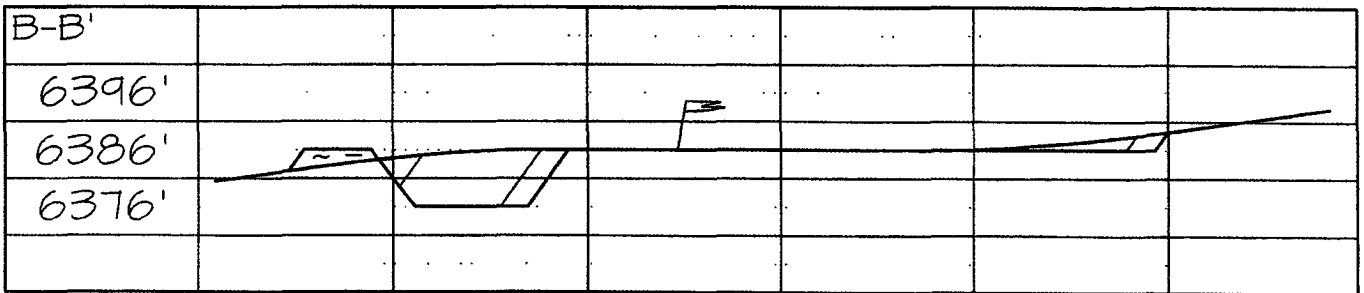
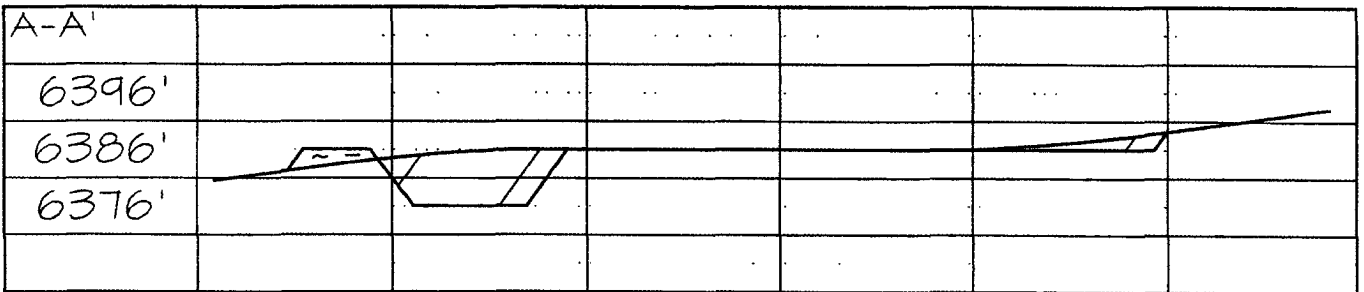
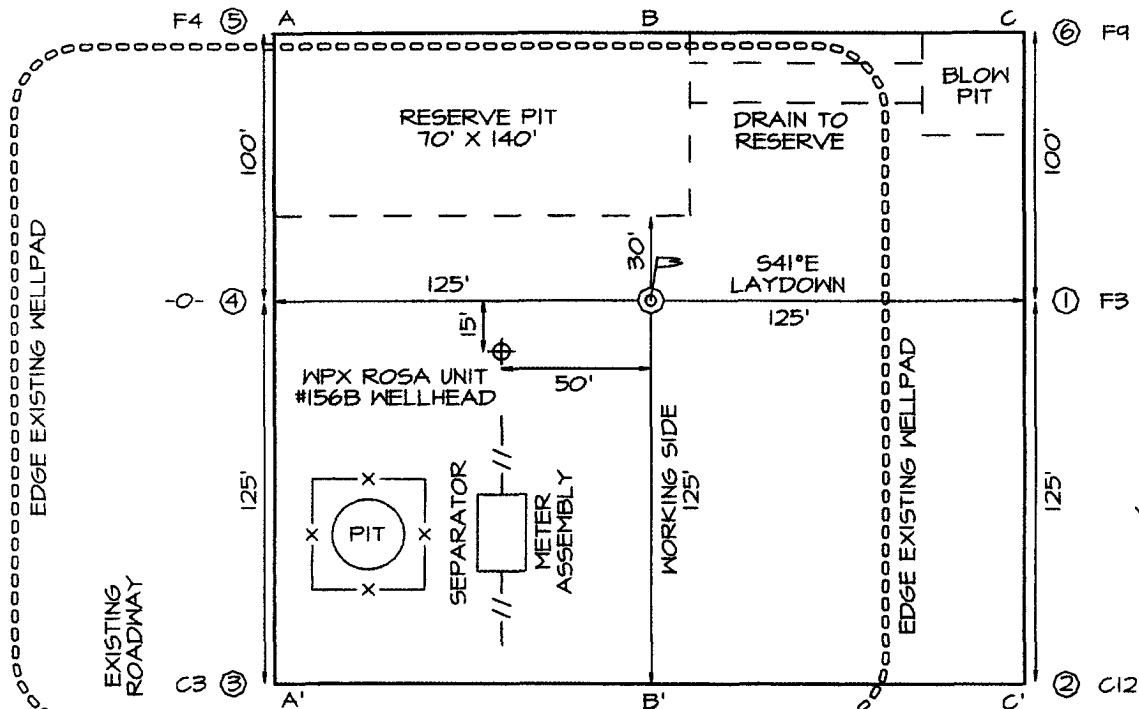
SIGNATURE Larry Higgins TITLE Drilling COM DATE 6-20-06

Type or print name Larry Higgins E-mail address: larry.higgins@williams.com Telephone No. (505) 634-4208

For State Use Only

APPROVED BY: [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DISI. DATE AUG 14 2006  
Conditions of Approval (if any):

**WILLIAMS PRODUCTION COMPANY ROSA UNIT #235A**  
**1635' FSL & 2580' FEL, SECTION 9, T31N, R6W, NMPM**  
**SAN JUAN COUNTY, NEW MEXICO ELEVATION: 6386'**





## **WILLIAMS PRODUCTION COMPANY**

### **Operations Plan**

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

**DATE:** 5/10/2006

**WELLNAME:** Rosa Unit #235A

**FIELD:** Basin Fruitland Coal

**BH LOCATION:** NWSE Sec. 9-T31N-6W

**SURFACE:** BLM

**SURF LOCATION:** NWSE Sec 9-31N-6W  
San Juan, NM

**MINERALS:** BLM

**ELEVATION:** 6,386' GR

**LEASE #** SF-078765

**TOTAL DEPTH:** 3,587'

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

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

NAME		TVD	MD		NAME		TVD	MD
San Jose		Surface	Surface		Top Coal		3,095	3,387
Nacimiento		1,135	1,182		Bottom Coal		3,195	3,487
Ojo Alamo		2,385	2,658		Pictured Cliffs		3,195	3,487
Kirtland		2,490	2,771		TD		3,295	3,587
Fruitland		2,985	3,276					

B. **LOGGING PROGRAM:** None

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

D. **MUD LOGGING PRORAM:** Mud logger will be on location at drill out below 7" casing to TD.

II. **DRILLING**

A. **MUD PROGRAM:** Clear water with benex to 7" casing point. Treat for lost circulation as necessary. Expect 100% returns prior to cementing. Notify Engineering of any mud losses. If coal is detected before 3,367', **DO NOT** drill deeper until Engineering is contacted.

B. **DRILLING FLUID:** Coal section will be drilled with Fruitland Coal water.

- C. **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:**

<u>CASING TYPE</u>	<u>HOLE SIZE</u>	<u>DEPTH (MD)</u>	<u>CASING SIZE</u>	<u>WT. &amp; GRADE</u>
Surface	12-1/4"	+/- 300'	9-5/8"	36# K-55
Intermediate	8-3/4"	+/- 3,367'	7"	20# K-55
Prod. Liner	6-1/4"	+/- 3,267' - 3,487'	5-1/2"	15.5# K-55

#### B. **FLOAT EQUIPMENT:**

1. **SURFACE CASING:** 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
2. **INTERMEDIATE CASING:** 7" 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:** 4-1/2" & 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:** Use 160 sx (224 cu.ft.) of "Type III" with 2% CaCl<sub>2</sub> and 1/4# of cello-flake/sk (Yield = 1.41 cu.ft./sk, Weight = 14.5 #/gal.). Use **120% excess** to circulate the surface. WOC 12 hours. Total volume = ~~286~~ <sup>224</sup> cu.ft. Test to 1500#.
2. **INTERMEDIATE:** Lead - 420 sx (872 cu.ft.) of "Type III" 65/35 poz with 8% gel, 1% CaCl<sub>2</sub> and 1/4# cello-flake/sk (Yield = 2.09 cu.ft./sk, Weight = 12.1 #/gal.). Tail - 50 sx (70cu.ft.) of "Type III" with 1/4# cello-flake/sk, and 1% CaCl<sub>2</sub> (Yield = 1.4 cu.ft./sk, Weight = 14.5#/gal.). Use **100% excess in Lead Slurry** to circulate to surface. **No excess in Tail Slurry.** Total volume = 942 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface.
3. **PRODUCTION LINER:** Open hole completion. No cement.



**Weatherford®**

ROSA UNIT #235A  
SEC 9 T 31N R 6W  
1635' FSL & 2580' FEL  
SAN JUAN COUNTY, NM

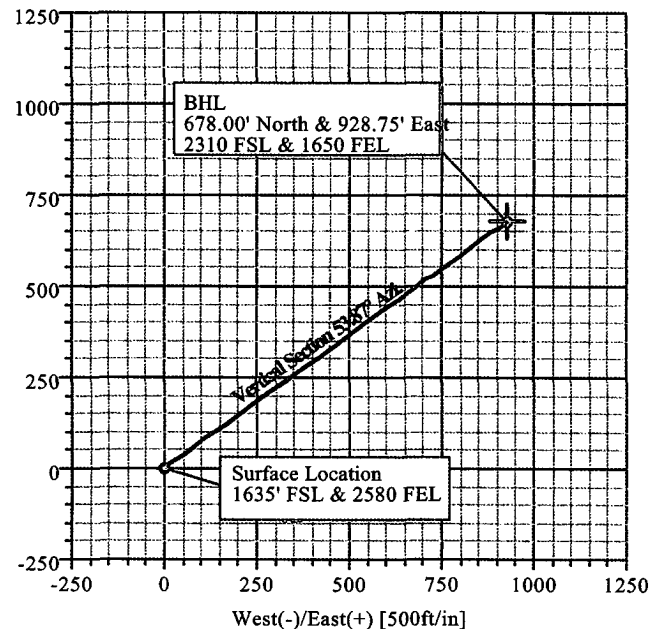
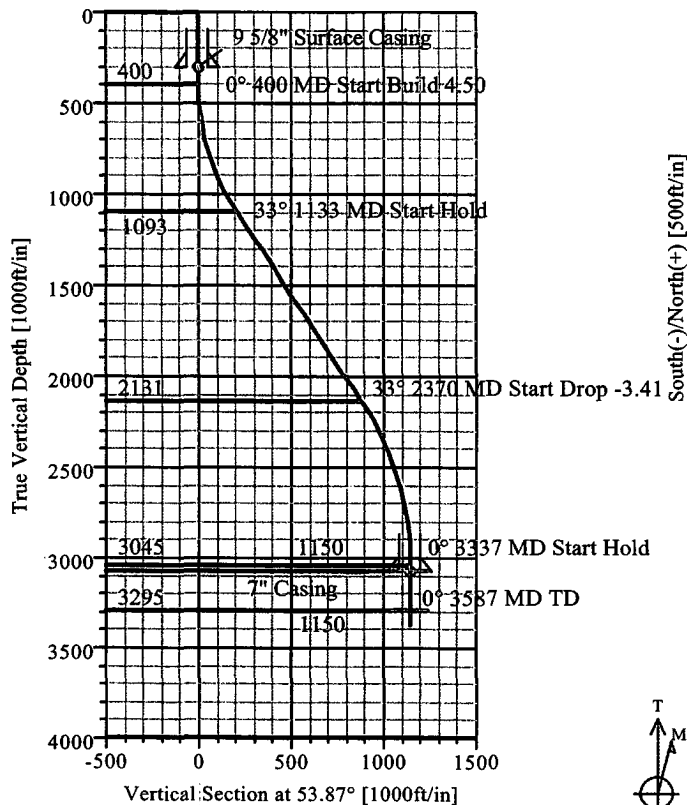
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	53.87	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	53.87	400.00	0.00	0.00	0.00	0.00	0.00	KOP
3	1133.33	33.00	53.87	1093.46	121.11	165.91	4.50	53.87	205.41	HOLD
4	2370.33	33.00	53.87	2130.89	518.35	710.06	0.00	0.00	879.13	DROP
5	3337.01	0.00	53.87	3045.00	678.00	928.75	3.41	180.00	1149.90	HOLD
6	3367.01	0.00	53.87	3075.00	678.00	928.75	0.00	0.00	1149.90	Int. Cs. Pt.
7	3587.01	0.00	53.87	3295.00	678.00	928.75	0.00	53.87	1149.90	TOTAL DEPTH

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit #235A	0.00	0.00	2151249.00	2829898.70	36°54'40.680N	107°28'04.836W	N/A

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Int. Cs. Pt.	3075.00	678.00	928.75	2151930.56	2830824.85	Point
BHL	3295.00	678.00	928.75	2151930.56	2830824.85	Point

FORMATION TOP DETAILS			
No.	TVDPath	MDPath	Formation
1	1135.00	1182.87	Nacimiento
2	2385.00	2658.69	Ojo Alamo
3	2490.00	2771.36	Kirtland
4	2985.00	3276.99	Fruitland
5	3095.00	3387.01	Top Coal Interval
6	3195.00	3487.01	Base Coal Interval
7	3195.00	3487.01	Pictured Cliffs

KB ELEVATION: 6400'  
GR ELEVATION: 6386'



Azimuths to True North  
Magnetic North: 10.40°

Magnetic Field  
Strength: 51447nT  
Dip Angle: 63.79°  
Date: 5/9/2006  
Model: igrf2005

Total Correction 10.40°

Plan: Plan #1 (Rosa Unit #235A)  
Created By: Jose Perez Date: 5/9/2006  
Weatherford Drilling Services  
Granbury Office  
3611 Plaza East Court  
Granbury, TX 76049  
(817) 573 8500 Main  
(817) 573 8001 Fax

## **GEOLOGIC PROGNOSIS**

Company: **Williams Production Company. LLC**  
Project: **2006 Drilling Plan (Fruitland Fm. Coal)**  
Area: **Rosa Unit**

Operator: **Williams Production Company. LLC**  
Well Name: **Rosa Unit No. 235A (Kfc-Directional)**  
Location: **NWSE 09-31N-06W**  
Footage: **1635' FSL & 2580' FEL**  
County/State: **San Juan/New Mexico**

Surveyed GL: 6386 Est: (14') KB: 6400

<b><u>Formation</u></b>	<b><u>Thickness</u></b>	<b><u>TVD</u></b>	<b><u>Struct. Elev.</u></b>
<i>San Jose Fm.</i>	1135	Surface	6386
<i>Nacimiento Fm.</i>	1250	1135	5265
<i>Ojo Alamo Ss.</i>	105	2385	4015
<i>Kirtland Sh.</i>	495	2490	3910
<i>Fruitland Fm.</i>	90	2985	3415
<b><u>Int. Csg. Depth</u></b>	20	<b><u>3075</u></b>	3325
Top Coal Interval	100	3095	<b>3305</b>
Base Coal Interval	0	3195	3205
<i>Pictured Cliffs Ss.</i>	100	3195	3205
<b><u>Total Depth</u></b>	NA	<b><u>3295</u></b>	3105

**Mud Log** Mud log (5"=100') from intermediate casing to TD  
(Mud Logger to pick TD)

**Mechanical Logs:** None

**Correlation Logs:** Rosa Unit No. 156A (NESE 09-31N-06W)

**Notes:** This well will be directionally drilled to a BHL  
2310' FSL & 1650' FEL 09-31N-06W



# WILLIAMS PRODUCTION Company, LLC

## Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

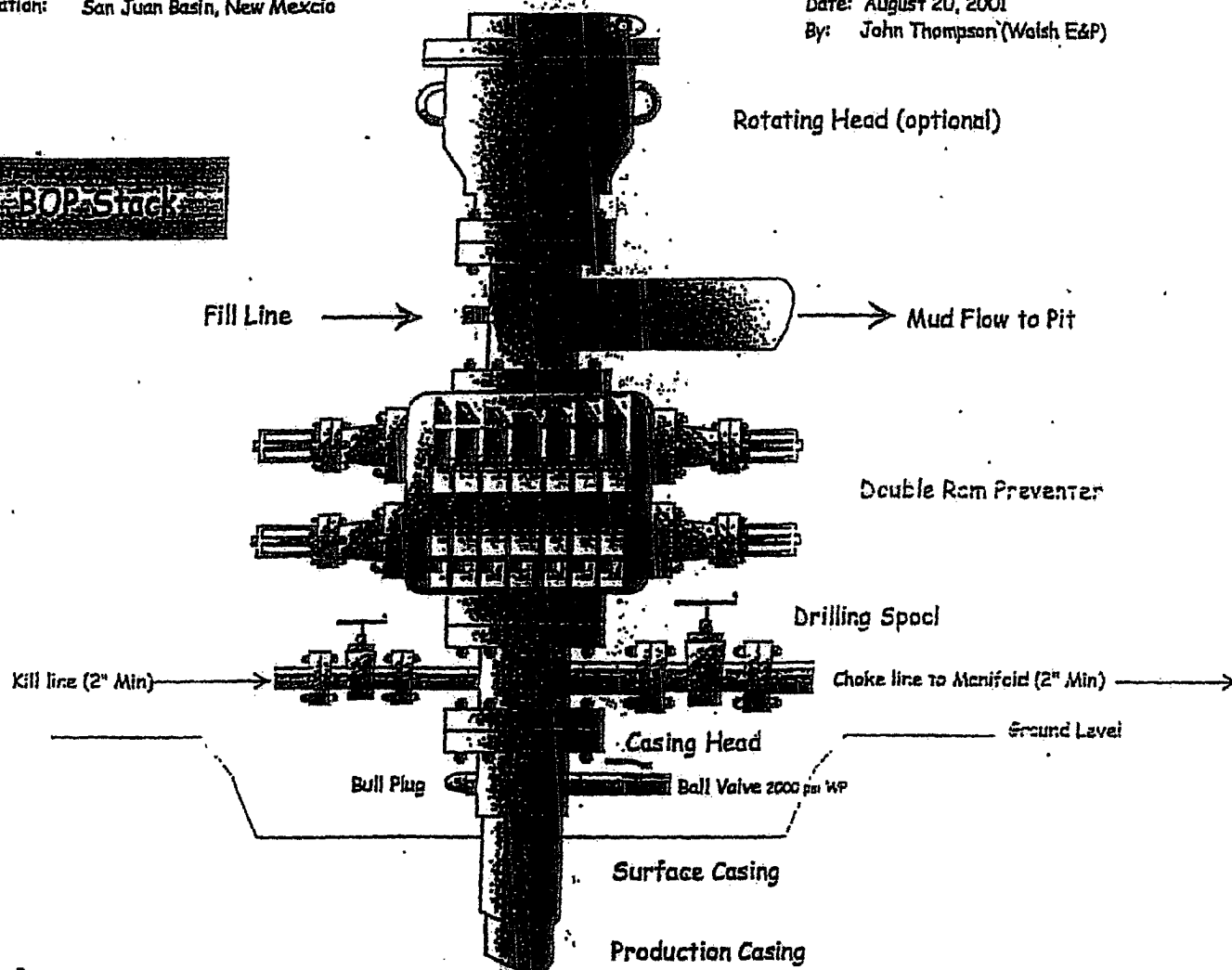
### Typical BOP setup

Location: San Juan Basin, New Mexico

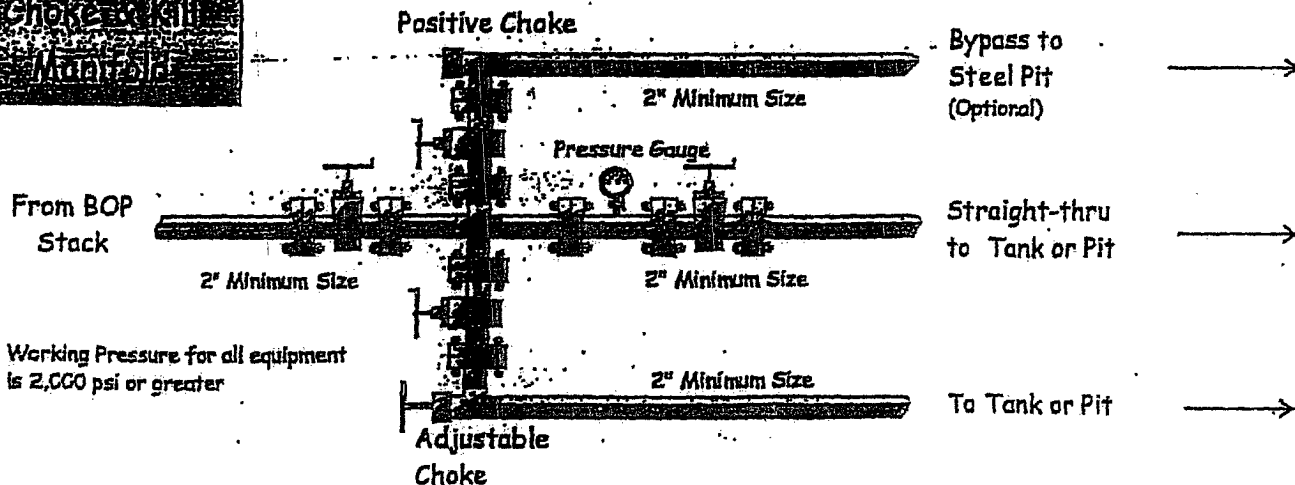
Date: August 20, 2001

By: John Thompson (Walsh E&P)

**BOP Stack**



**Choke & Kill Manifold**



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

## GENERAL ROSA DRILLING PLAN

### Rosa Unit boundries:

T31N, R4W: all except sections 32-36  
T31N, R5W: all except sections 1 & 2  
T31N, R6W: all except sections 6,7,18,20, & 27-36  
T32N, R6W: sections 32-36

FORMATION	LITHOLOGY	WATER	GAS	OIL/COND	OVER-PRES	LOST CIRC
Nacimiento	Interbedded shales, siltstones and sandstones	Possible	Possible	No	No	No
Ojo Alamo	Sandstone and conglomerates with lenses of shale	Fresh	No	No	No	No
Kirtland	Shale W/interbedded sandstones	No	Possible	No	No	No
Fruitland	Inter, SS, Siltst, SH & Coals w/carb, SS, Siltst, SH	Yes	Yes	No	Possible	Possible
Pictured Cliffs	Massive Sandstone w/thin interbedded shales	Possible	Yes	Possible	No	Possible
Lewis	Shale w/thin interbedded sandstones and siltstones	No	Possible	No	No	No
Cliff House	Transgressive sandstones	Possible	Yes	No	No	No
Menefee	Sandstones, carb shales and coal	Possible	Yes	No	No	No
Point Lookout	Regressive coastal barrier sandstone	Possible	Yes	Possible	No	Yes
Mancos	Marine shale and interbedded sandstone	No	Possible	Possible	No	Possible
Upr Dakota	Marine sand and shales	No	Yes	Possible	No	Possible
Lwr Dakota	Fluvial sands, shales, & coal	Possible	Yes	Possible	No	Possible

## DRILLING

### Potential Hazards:

1. There are no overpressured zones expected in this well.
2. No H2S zones will be penetrated while drilling this well.

### Mud System:

1. Surface - The surface hole will be drilled with a low-solids, non-dispersed system with starch and lost circulation material as needed. Expected mud weights will be in the 8.4 to 9.0 lb per gal range. Viscosities will be in the 30 to 60 sec/qrt range as needed to remove drill cuttings.
2. Intermediate - The intermediate hole will be drilled with clear water and Benex to TD where the well will be mudded up to log and run casing. The mud system will be low-solids, non-dispersed with mud weights in the 9 to 10 lb per gal range as needed to control the well. Viscosities will be in the 45 to 55 range as needed to support any weight material. The weight material will consist of Barite.
3. Production - The well will be drilled using air from the intermediate casing point to TD. For Fruitland Coal wells, the coal section will be drilled with air/mist.