

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.  
NMSF-078894  
6. If Indian, Allottee or Tribe Name

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 710' FNL & 820' FEL, Section 33, T. 31N., R. 4W.

At proposed prod. zone 660' FSL & 820' FEL, Section 28, T. 31N., R. 4W

7 If Unit or CA Agreement, Name and No.

Rosa Unit

8. Lease Name and Well No

311A

9 API Well No.

30-039-30441

10. Field and Pool, or Exploratory

Basin Fruitland Coal

11. Sec., T., R., M., or Bk. and Survey or Area  
Section 33, T. 31N., R. 4W. NMPM

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

approximately 33 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)

660'

16. No. of Acres in lease

2,284.160

17. Spacing Unit dedicated to this well

320.0 (E/2)

18. Distance from proposed location\*

to nearest well, drilling, completed,  
applied for, on this lease, ft.

300'

19. Proposed Depth

4,061'

20. BLM/BIA Bond No. on file

UT0847

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

6739' GR

22. Approximate date work will start\*

April 2008

23 Estimated duration

1 month

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. I, 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

12-26-07

Title

Drilling COM

Approved by (Signature)

*DA Mankiewicz*  
ACM

Name (Printed/Typed)

Office

FEO

Date

6/23/08

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.

**NOTIFY AZTEC OCD 24 HRS.**

**PRIOR TO CASING & CEMENT**

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)

Hold C104

for Directional Survey  
and "As Drilled" plat

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 U.S. Forest Service, Jicarilla Ranger District, Carson National Forest.



**H<sub>2</sub>S POTENTIAL E**

This loc. Jicarilla: A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOC FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOC PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

This API of 289.3

biological Consultants. Copies of their report have been submitted directly to the USFS,

and gas pipeline. Required for this location is an 100-foot access road, and a gas pip

ploration and Production Company, LLC.

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

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

Hold C104

for Directional Survey  
and "As Drilled" plat

**RECEIVED**

DEC 26 2007

Bureau of Land Management  
Farmington Field Office

NMOC

JUN 30 2008

**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**

**NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT**

A COMPLETE C-144 MUST BE SUBMITTED TO AND  
APPROVED BY THE NMOC FOR: A PIT, CLOSED  
LOOP SYSTEM, BELOW GRADE TANK, OR  
PROPOSED ALTERNATIVE METHOD, PURSUANT TO  
NMOC PART 19.15.17, PRIOR TO THE USE OR  
CONSTRUCTION OF THE ABOVE APPLICATIONS.

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

*API Number <b>30-039-30441</b>		*Pool Code <b>71629</b>	*Pool Name <b>BAŞIN FRUITLAND COAL</b>
*Property Code <b>17033</b>	*Property Name <b>ROSA UNIT</b>		*Well Number <b>311A</b>
*OGRID No <b>120782</b>	*Operator Name <b>WILLIAMS PRODUCTION COMPANY</b>		*Elevation <b>6739'</b>

#### 10 Surface Location

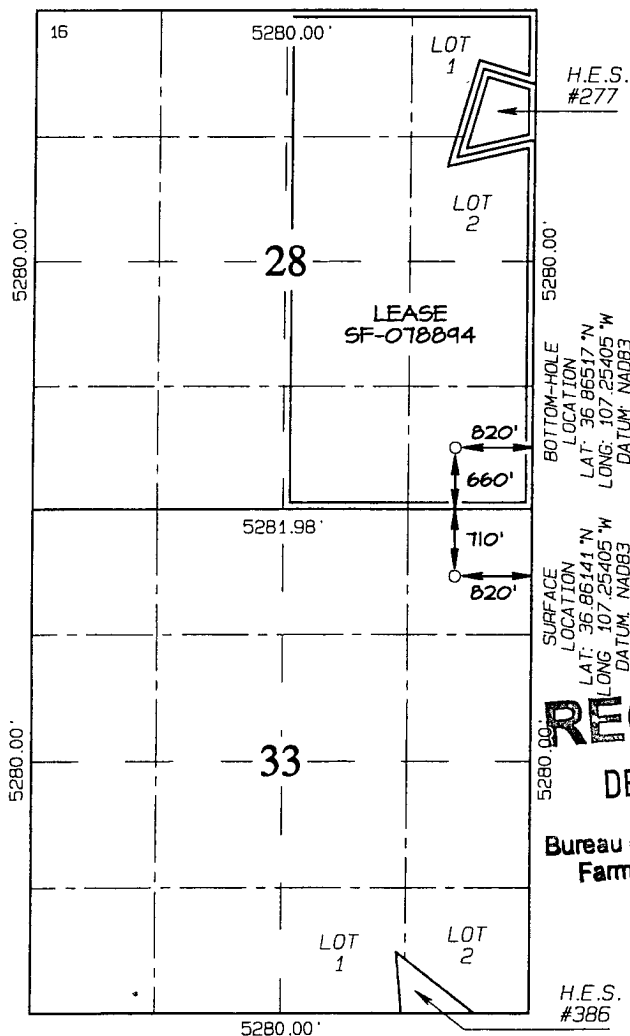
UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	33	31N	4W		710	NORTH	820	EAST	RIO ARriba

#### 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
P	28	31N	4W		660	SOUTH	820	EAST	RIO ARriba

12 Dedicated Acres <b>320.0 Acres - E/2</b>	13 Joint or Infill	14 Consolidation Code	15 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



#### 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* 12-26-07  
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.

Survey Date: SEPTEMBER 27, 2006

Signature and Seal of Professional Surveyor



*JASON C. EDWARDS*  
Certificate Number 15269

**RECEIVED**

**DEC 26 2007**

Bureau of Land Management  
Farmington Field Office



## WILLIAMS PRODUCTION COMPANY

### Operations Plan

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

**DATE:** 12/18/2007

**WELLNAME:** Rosa Unit #311A      **FIELD:** Basin Fruitland Coal

**BH LOCATION:** SESE Sec. 28-T31N-4W      **SURFACE:** USFS

**SURF LOCATION:** NENE Sec 33-31N-4W  
Rio Arriba, NM      **MINERALS:** BLM

**ELEVATION:** 6,739' GR      **LEASE #** SF-078894

**TOTAL DEPTH:** 4,061'

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

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

NAME		TVD	MD		NAME		TVD	MD
San Jose		Surface	Surface		Top Coal		3,508	3,861
Nacimiento		1,798	1,870		Bottom Coal		3,578	3,941
Ojo Alamo		3,018	3,279		Pictured Cliffs		3,578	3,941
Kirtland		3,128	3,402		TD		3,678	4,061
Fruitland		3,353	3,666					

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. Mud Logger to pick 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 3,822', **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:**

CASING TYPE	OH SIZE (IN)	DEPTH (MD) (FT)	CASING SIZE (IN)	WEIGHT(LB)	GRADE
Surface	12 1/4	300	9 5/8	36	K-55
Intermediate	8 3/4	3,882	7	20	K-55
Liner	6 1/4	3,782   3,941	5 1/2	15.5	J-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:** 5-1/2" whirler type cement nose guide shoe

#### 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 **100% excess** to circulate the surface. . WOC 12 hours. Total volume = 206 cu.ft. Test to 1500#.
2. **INTERMEDIATE:** Lead - 495 sx (1026 cu.ft.) of "Premium Light" 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 (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 = 1096 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.

IV. COMPLETION

A. PRESSURE TEST

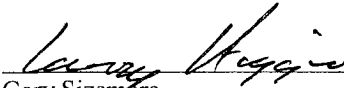
1. Pressure test 7" casing to 1500# for 30 minutes.

B. STIMULATION

1. Cavitate well with reciprocation and rotation. Surge wells with water and air and then flow back. Cavitate for 2 to 3 weeks. Maximum pressure not expected to exceed 2,000 psi.

C. RUNNING TUBING

1. Fruitland Coal. Run 2-7/8", 6.5#, J-55, EUE tubing with a SN on top of bottom joint. Land tubing approximately 50' above TD.

  
1-02 Gary Sizemore  
Sr. Drilling Engineer



ROSA UNIT #311-A  
RIO ARriba CO., NEW MEXICO



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2	400 00	0 00	0 00	400 00	0 00	0 00	0 00	0 00	0 00	
3	1801 03	30 00	0 00	1737 88	358 48	0 00	2 14	0 00	358 48	
4	3821 89	30 00	0 00	3488 00	1368 91	0 00	0 00	0 00	1368 91	Int Csg Pt

WELL DETAILS

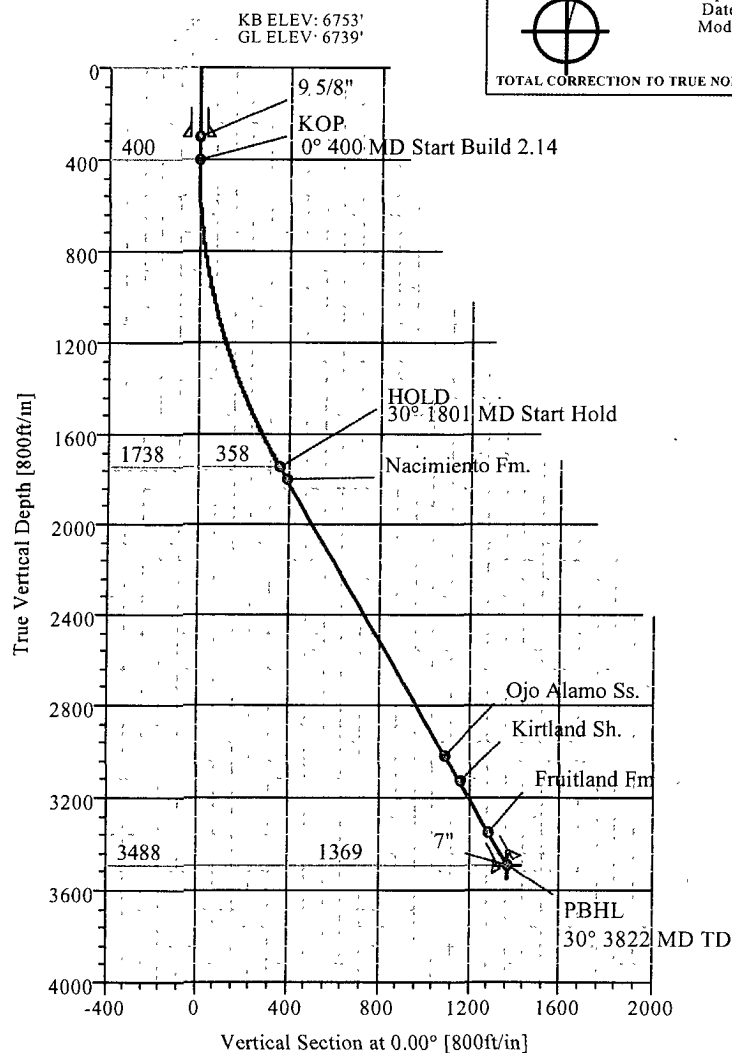
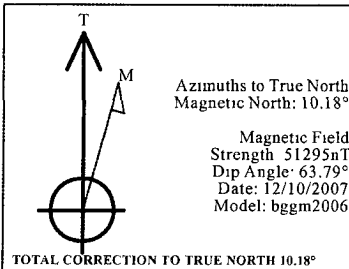
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#311-A	0 00	0 00	650258 90	881652 35	36°51'41 076N	107°15'14 580W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Int Csg Pt	3488 00	1368 91	0 00	36°51'54 612N	107°15'14 580W	Point

FORMATION TOP DETAILS

No	TVDPath	MDPath	Formation
1	1798 00	1870 44	Nacimiento Fm
2	3018 00	3279 18	Ojo Alamo Ss
3	3125 00	3402 73	Kirtland Sh
4	3353 00	3666 00	Fruitland Fm

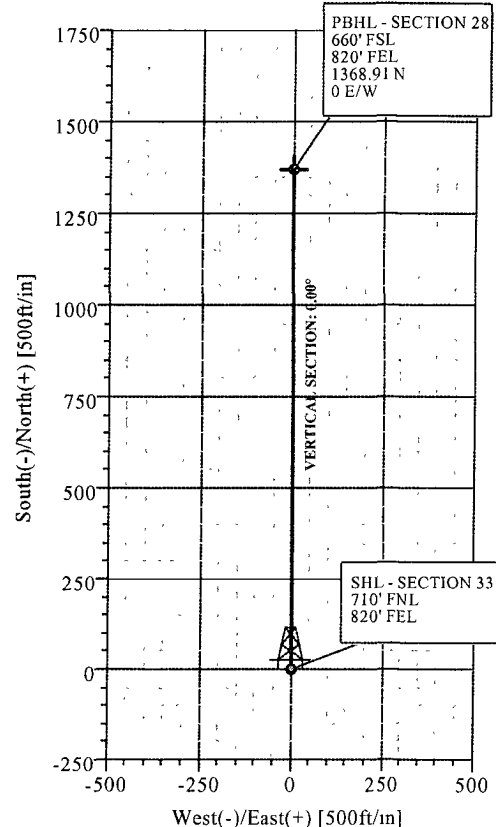


SITE DETAILS

Rosa Unit #311-A  
710' FNL 820' FEL of SEC 33 T 31N R 4W  
Site Centre Latitude 36°51'41 076N  
Longitude 107°15'14 580W  
Ground Level 6739 00  
Positional Uncertainty 0 00  
Convergence 0 35

CASING DETAILS

No	TVD	MD	Name	Size
1	300 00	300 00	9 5/8"	9 625
2	3488 00	3821 89	7"	7 000



FIELD DETAILS

Rio Arriba County (NAD 83)  
Geodetic System US State Plane Coordinate System 1983  
Ellipsoid GRS 1980  
Zone New Mexico, Western Zone  
Magnetic Model bggm2006  
System Datum Mean Sea Level  
Local North True North

Plan: Plan #1 (#311-A/1)

Created By Lindsey Maddux

Date 12/12/2007

## GENERAL ROSA DRILLING PLAN

### Rosa Unit boundaries:

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

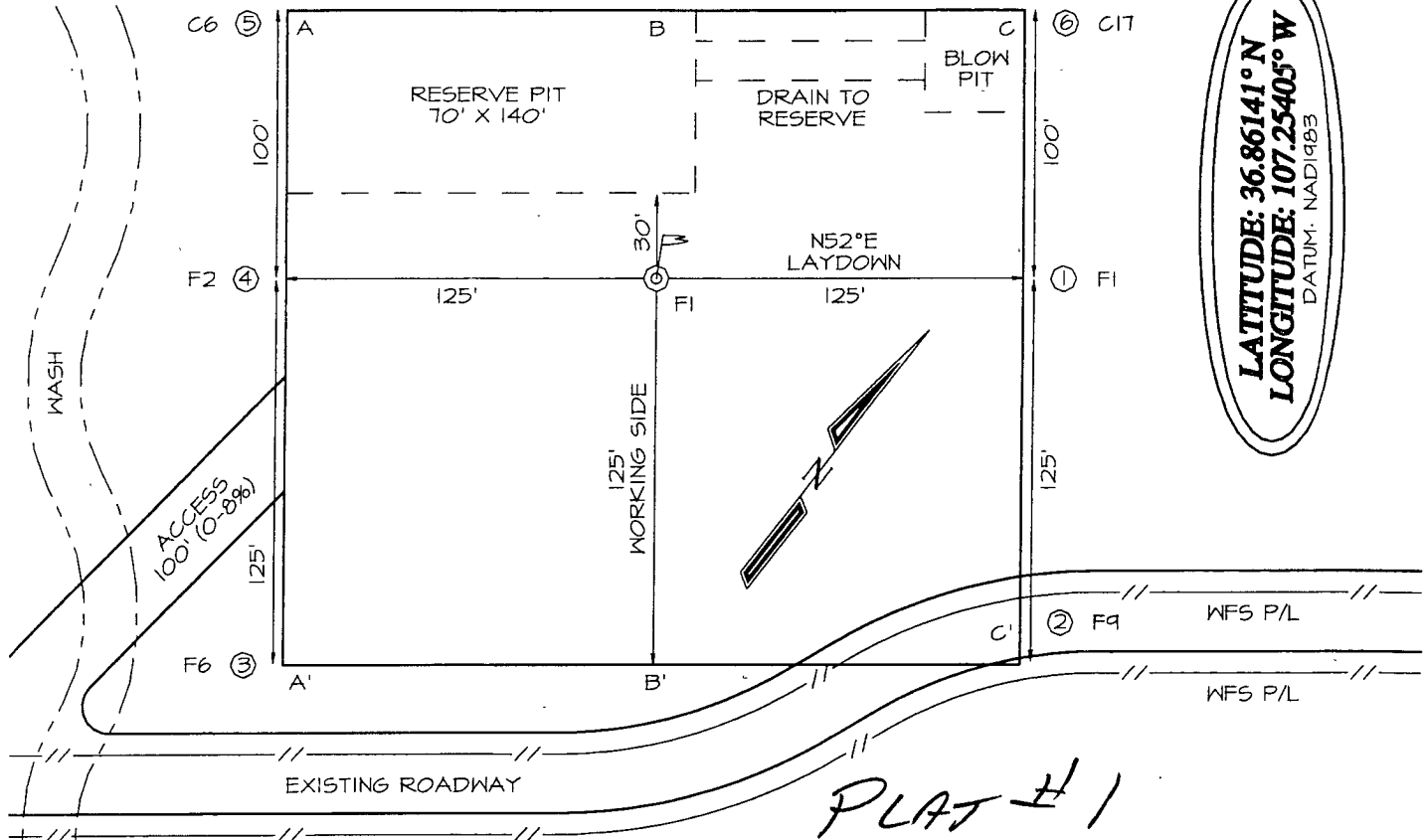
### Potential Hazards:

1. There are no overpressured zones expected in this well.
2. No H<sub>2</sub>S zones will be penetrated while drilling this well.

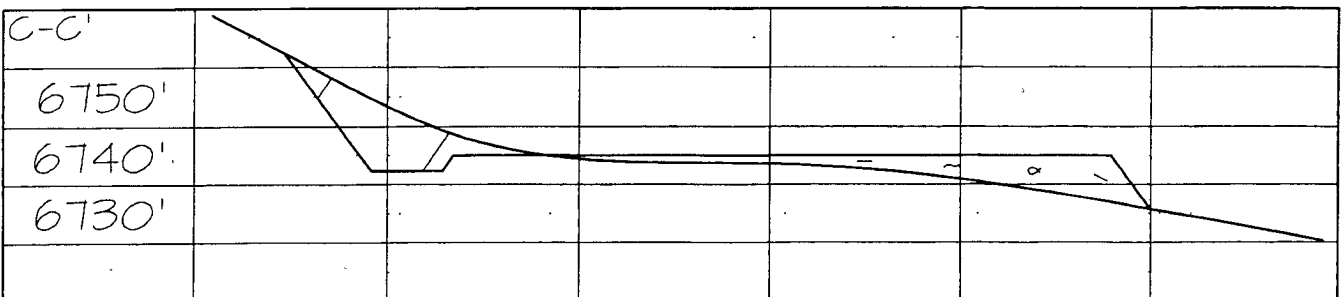
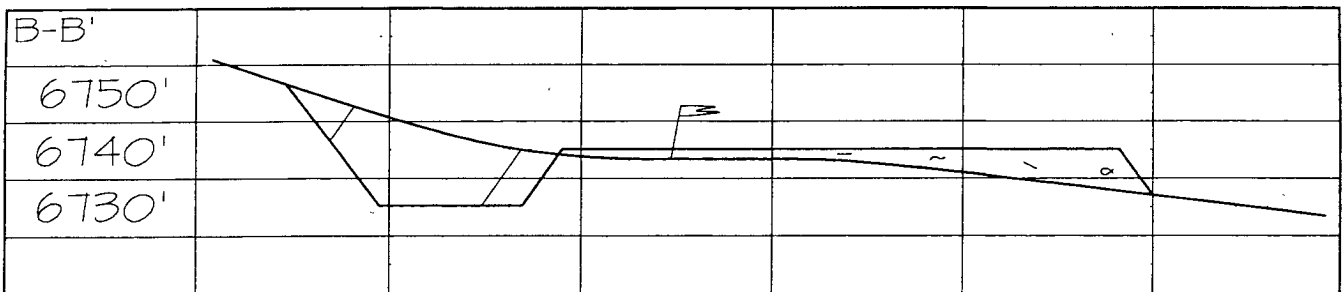
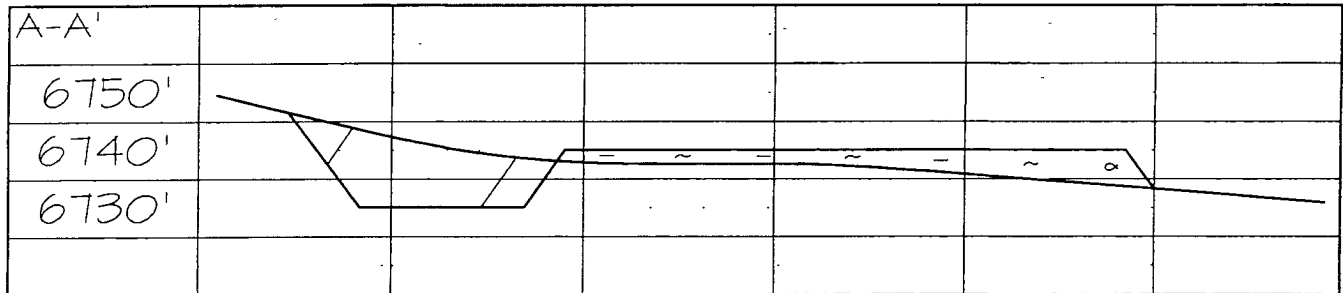
### Mud System:

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.

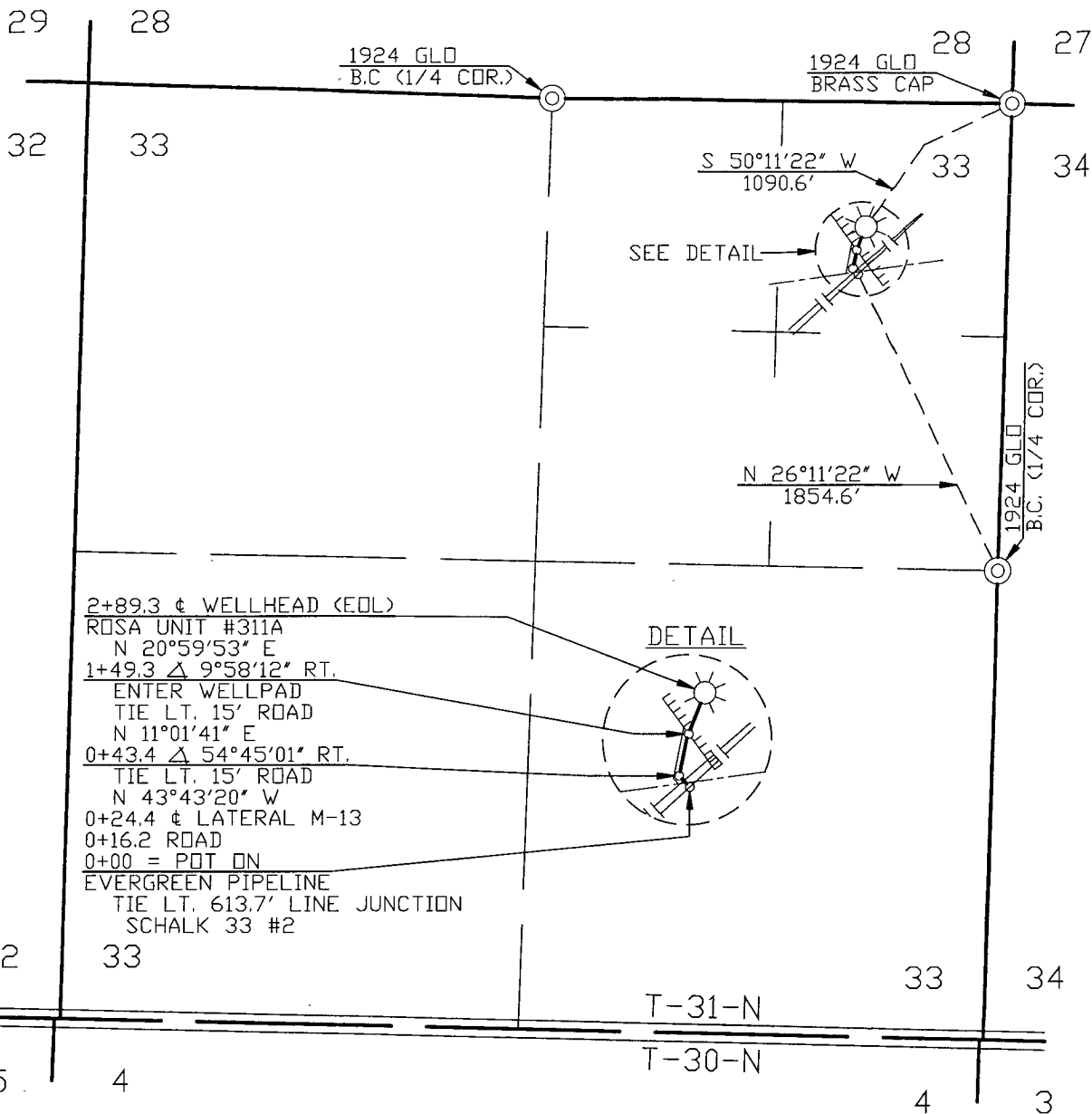
**WILLIAMS PRODUCTION COMPANY ROSA UNIT #311A**  
**710' FNL & 820' FEL, SECTION 33, T31N, R4W, NMPM**  
**RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6739'**



**LATITUDE: 36.86141° N**  
**LONGITUDE: 107.25405° W**  
 DATUM: NAD1983







NOTE: BEARINGS ARE BASED ON A GRID BEARING.  
 ALONG THE EAST LINE OF THE NE 1/4 OF  
 SECTION 33, T-31-N, R-4-W, NMPM  
 BEARS: S 1°18'02" W

PRELIMINARY  
DRAWING

PLAT #2

PIPE DATA

OWNERSHIP

REVISION

SUBDIVISION

OWNER

FEET

MILES

ACRES

RODS

INFO

DRAFTING

BY

DATE

STATE: NEW MEXICO

WILLIAMS FOUR CORNERS, LLC Williams

ONE OF THE WILLIAMS COMPANIES

R/W #: 06869

DRAWN BY

LB

11/07/07

METER #:

CHECKED BY

PB

11/09/07

SURVEYED: 12/01/06

APPROVED BY

ENGINEER

BY

DATE

DESIGNED BY

PROJ. APPROVED

SCALE: 1" = 1000'

W.O. NO.

DWG NO.

765.0-45-1

SHEET  
1  
OF  
1

REV  
1

EVERGREEN GATHERING SYSTEM  
 WPX - ROSA UNIT #311A  
 0+00 = POT ON EVERGREEN PIPELINE  
 (REF DWG. EVERGREEN)  
 SEC. 33, T-31-N, R-4-W, NMPM

# Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

## Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

Date: August 20, 2001

By: John Thompson (Walsh E&P)

