

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-078771

6. If Indian, Allottee or Tribe Name

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

Rosa Unit NMNM-78407A-MV

8. Lease Name and Well No.

9C

9. API Well No.

30-039-30179

10. Field and Pool, or Exploratory

Blanco Mesaverde

11. Sec., T., R., M., or Blk. and Survey or Area

M Section 11, 31N, 6W

12. County or Parish

Rio Arriba

13. State

NM

17. Spacing Unit dedicated to this well

ROUND OCT 15 '07

20. BLM/BIA Bond No. on file

OTI CONS. DIV.

DIST. 3

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

1-31-07

Title

Drilling COM

Approved by (Signature)

RECEIVED

Name (Printed/Typed)

Office

FFO

Date

10/5/07

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 develop the Blanco Mesaverde formation at the above described location in accordance with the attached drilling and surface use plans.

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

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

This APD is also serving as an application to obtain a pipeline right-of-way. An associated pipeline tie of 1194.60 feet would be required for this location.

PA

✓

NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT

HOLD ON for directional survey  
as drilled C-102 form

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

OCT 18 2007

NMOCD

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

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

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised February 21, 1994

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

Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

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

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

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

2007 JUN 31 AM 7:00 ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 36039-30179		*Pool Code 72319	*Pool Name BLANCO MESAVERDE
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 9C
*GRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6386'

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
M	11	31N	6W		380	SOUTH	1135	WEST	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
M	11	31N	6W		380	SOUTH	330	WEST	RIO ARriba

12 Dedicated Acres 320.0 Acres - (W/2)	13 Joint or Infill	14 Consolidation Code	15 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>16</p> <p>5289.24'</p>	<p>17 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 LARRY HIGGINS Printed Name DRILLING COM Title 1-31-07 Date</p>
	<p>5280.00'</p> <p>11</p> <p>5280.00'</p>	<p>18 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>Date of Survey: APRIL 26, 2006</p> <p>Signature and Seal of Professional Surveyor</p> <p></p> <p><i>JASON C. EDWARDS</i> Certificate Number 15269</p>

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>30-039-30179</b>
5. Indicate Type of Lease FEDERAL X STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. <b>NMSF-078771</b>
7. Lease Name or Unit Agreement Name <b>Rosa</b>
8. Well Number <b>9C</b>
9. OGRID Number <b>120782</b>
10. Pool name or Wildcat <b>Blanco Mesaverde</b>

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (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 <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input type="checkbox"/>	7. Lease Name or Unit Agreement Name <b>Rosa</b>
2. Name of Operator <b>Williams Production Company, LLC</b>	8. Well Number <b>9C</b>
3. Address of Operator <b>POB 640, Aztec, NM</b>	9. OGRID Number <b>120782</b>
4. Well Location Unit Letter <b>M</b> : <b>380</b> feet from the <b>S</b> line and <b>1135</b> feet from the <b>W</b> line Section <b>11</b> Township <b>31N</b> Range <b>06W</b> NMPM County <b>Rio Arriba</b>	10. Pool name or Wildcat <b>Blanco Mesaverde</b>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <b>6386' GR</b>	
Pit or Below-grade Tank Application <input checked="" type="checkbox"/> or Closure <input type="checkbox"/>	
Pit type <u>Drlg/Completion</u> Depth to Groundwater <u>&gt;100 ft</u> Distance from nearest fresh water well <u>&gt;1000 ft</u> Distance from nearest surface water <u>&gt;500 ft</u>	
Pit Liner Thickness: <u>12</u> mil Below-Grade Tank: Volume <u>        </u> bbls: Construction Material <u>        </u>	

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER: <input type="checkbox"/>		OTHER: <input type="checkbox"/>	

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 1-31-07

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, DATE OCT 18 2007  
District #3

Conditions of Approval (if any):



## WILLIAMS PRODUCTION COMPANY

### Operations Plan

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

**DATE:** 1/15/2007 **FIELD:** Blanco MV  
**WELL NAME:** Rosa #9C **SURFACE:** FED  
**BH LOCATION:** SWSW Sec 11-31N-6W **MINERALS:** FED  
Rio Arriba, NM  
**SURF LOCATION:** SWSW Sec 11-31N-6W  
**ELEVATION:** 6,386' GR **LEASE #** SF-078771  
**MEASURED DEPTH:** 6,291

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

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

Name		TVD	MD		Name		TVD	MD
Ojo Alamo		2,440	2,520		Cliff House		5,405	5,519
Kirtland		2,545	2,630		Menefee		5,453	5,567
Fruitland		2,940	3,045		Point Lookout		5,702	5,816
Pictured Cliffs		3,220	3,332		Mancos		6,007	5,121
Lewis		3,515	3,629		TD		6,177	6,291

**B. MUD LOGGING PROGRAM:** none

**C. LOGGING PROGRAM:** Cased Hole logs only

**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:** Clear water with benex to 7" casing point. Convert to a LSND mud to log and run pipe. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses. Use air w/Air Hammer from 7 in. csg.to TD.

**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	12 1/4	300	9 5/8	36	K-55
Intermediate	8 3/4	3,814	7	20	K-55
Liner	6 1/4	3,714 6,291	4 1/2	10.5	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 (3) 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 CASING:** 4-1/2" 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.

**IV. CEMENTING:**

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

1. **SURFACE:** Slurry: 150sx (205 cu.ft.) of "Type III" + 2% CaCl<sub>2</sub> + ¼ # of cello-flake/sk (Yield = 1.39 cu.ft./sk, Weight = 14.5 #/gal.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 1500psi.
2. **INTERMEDIATE:** Lead - 485 sx (1006) 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 = 1,076 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface.
3. **PRODUCTION LINER:** 10 bbl Gelled Water spacer. Cement: 155 sx (330 ft<sup>3</sup>) of Premium Light HS + 1% FL-52 + .2% CD-32, 0.1% R-3, 3 #/sk CSE, ¼ #/sk cello flake and 4% Phenoseal. (Yield = 2.15 ft<sup>3</sup>/sk, Weight = 12.3 #/gal.). Displace cement at a minimum of 8 BPM. The 20% excess in lead and tail should cover 100 ft into intermediate casing. Total volume 330 ft<sup>3</sup>. WOC 12 hours

**V. 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 is not circulated to surface.

**B. PRESSURE TEST**


1. Pressure test 7" & 4-1/2" casing to max 3300 psi, hold at 1500 psi for 30 minutes.

**C. STIMULATION**

1. Perforate the Point Lookout as determined from the open hole logs.
2. Stimulate with approximately 9,300# of 14/30 LiteProp™ sand in slick water.
3. Isolate Point Lookout with a CIBP.
4. Perforate the Menefee/Cliff House as determined from the open hole logs.
5. Stimulate with approximately 9,300# of 14/30 LiteProp™ sand in slick water.
6. Test each zone before removing bridge plugs.

**D. RUNNING TUBING**

1. Mesa Verde: 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 Gary Sizemore  
Sr. Drilling Engineer



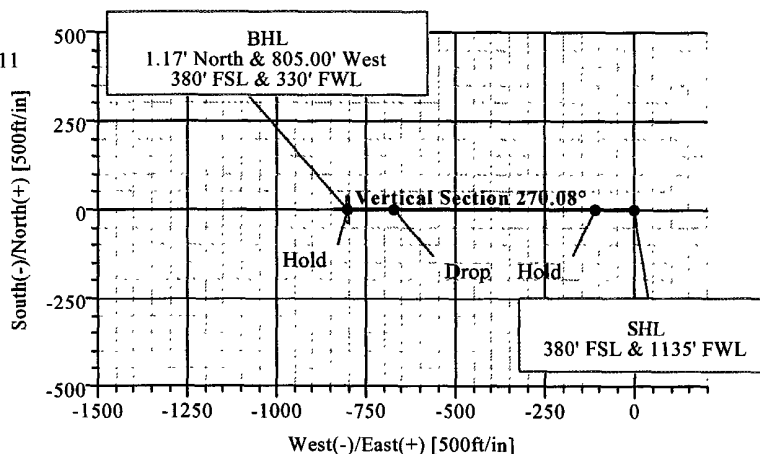
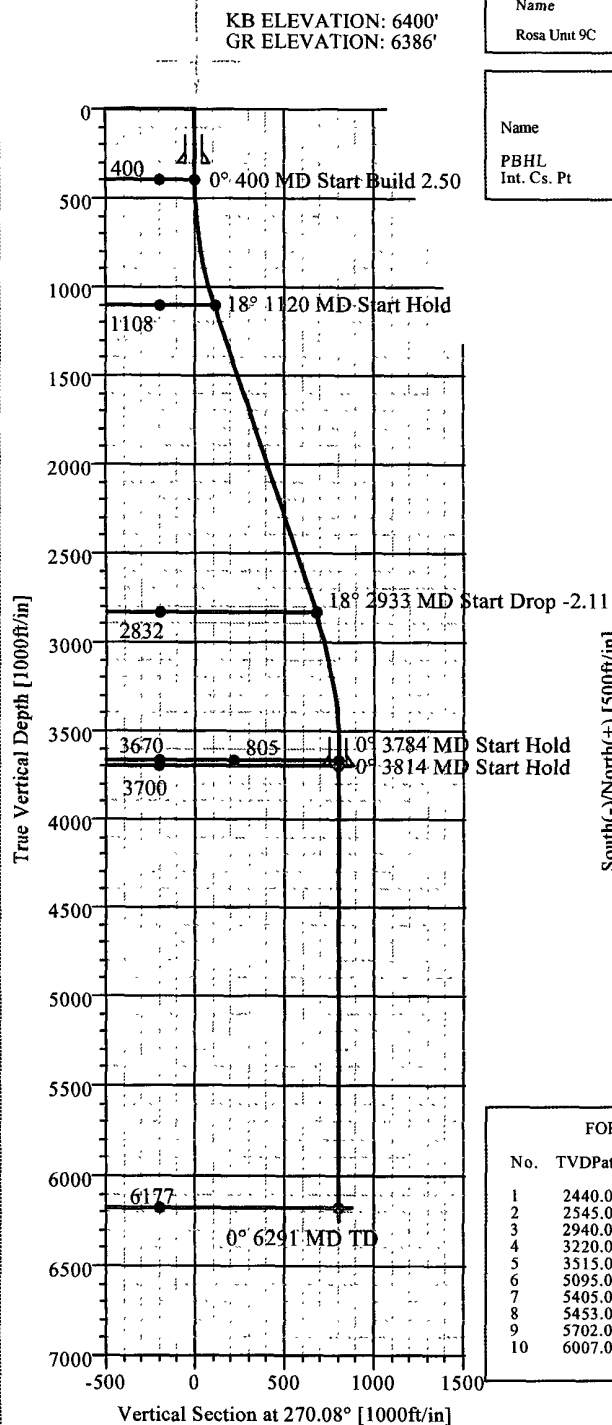
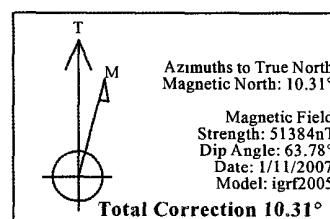
**Weatherford**

Rosa Unit 9C  
Section 11 T31N R6W  
380' FSL & 1135' FWL  
Rio Arriba County, NM  
Plan 1

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	270.08	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	270.08	400.00	0.00	0.00	0.00	0.00	0.00	
3	1120.00	18.00	270.08	1108.21	0.16	-112.17	2.50	270.08	112.17	
4	2932.57	18.00	270.08	2832.07	0.97	-672.28	0.00	0.00	672.29	
5	3784.44	0.00	270.08	3670.00	1.17	-805.00	2.11	180.00	805.00	
6	3814.44	0.00	270.08	3700.00	1.17	-805.00	0.00	0.00	805.00	Int. Cs. Pt
7	6291.44	0.00	270.08	6177.00	1.17	-805.00	0.00	270.08	805.00	PBHL

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit 9C	0.00	0.00	1093727.06	2433549.57	36°54'28.548N	107°26'14.496W	N/A

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	6177.00	1.17	-805.00	1093744.92	2432744.77	Circle (Radius: 50)
Int. Cs. Pt	3700.00	1.17	-805.00	1093744.92	2432744.77	Point



FORMATION TOP DETAILS			
No.	TVDPath	MDPath	Formation
1	2440.00	2520.32	Ojo Alamo
2	2545.00	2630.73	Kirtland
3	2940.00	3045.32	Fruitland
4	3220.00	3332.35	Pictured Cliffs
5	3515.00	3629.36	Lewis
6	5095.00	5209.44	Cliff House Trans
7	5405.00	5519.44	Cliff House
8	5453.00	5567.44	Menefee
9	5702.00	5816.44	Point Lookout
10	6007.00	6121.44	Mancos

Plan: Plan #1 (Rosa Unit 9C)  
Created By: Jose Perez Date: 01/11/07  
Weatherford Drilling Services  
11943 FM 529  
Houston TX USA 77041  
(713) 896 8194 MAIN  
(713) 896 0498 FAX

# GEOLOGIC PROGNOSIS

Company: Williams Production Company. LLC  
Project: 2007 Drilling Plan  
Area: Rosa Unit

Operator: Williams Production Company. LLC  
Well Name: Rosa Unit No. 9C (Kmv-Directional)  
Location: SWSW 11-31N-06W  
Footage: 0380' FSL & 1135' FWL  
County/State: Rio Arriba/New Mexico

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

<u>Formation</u>	<u>Thickness</u>	<u>TVD</u>	<u>Struct. Elev.</u>
San Jose Fm.	2440	Surface	6386
Ojo Alamo Ss.	105	2440	3960
Kirtland Sh.	395	2545	3855
Fruitland Fm.	280	2940	3460
Pictured Cliffs Ss.	295	3220	3180
Lewis Sh.	180	3515	2885
<u>Intermediate Casing Depth</u>	1400	<u>3695</u>	2705
Cliff House Ss. Trans.	310	5095	<b>1305</b>
Cliff House Ss.	48	5405	995
Menefee Fm.	249	5453	947
Point Lookout Ss.	305	5702	698
Mancos Sh.	170	6007	393
<u>Total Depth</u>	NA	<u>6177</u>	223

Mechanical Logs: Cased hole (TMDL, CBL) logs only

Correlation Logs: Rosa Unit No. 16A (NENW 14-31N-06W)

Notes: This well will be directionally drilled to a BHL  
0380' FSL & 0360' FWL 11-31N-06W

0330'



## 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

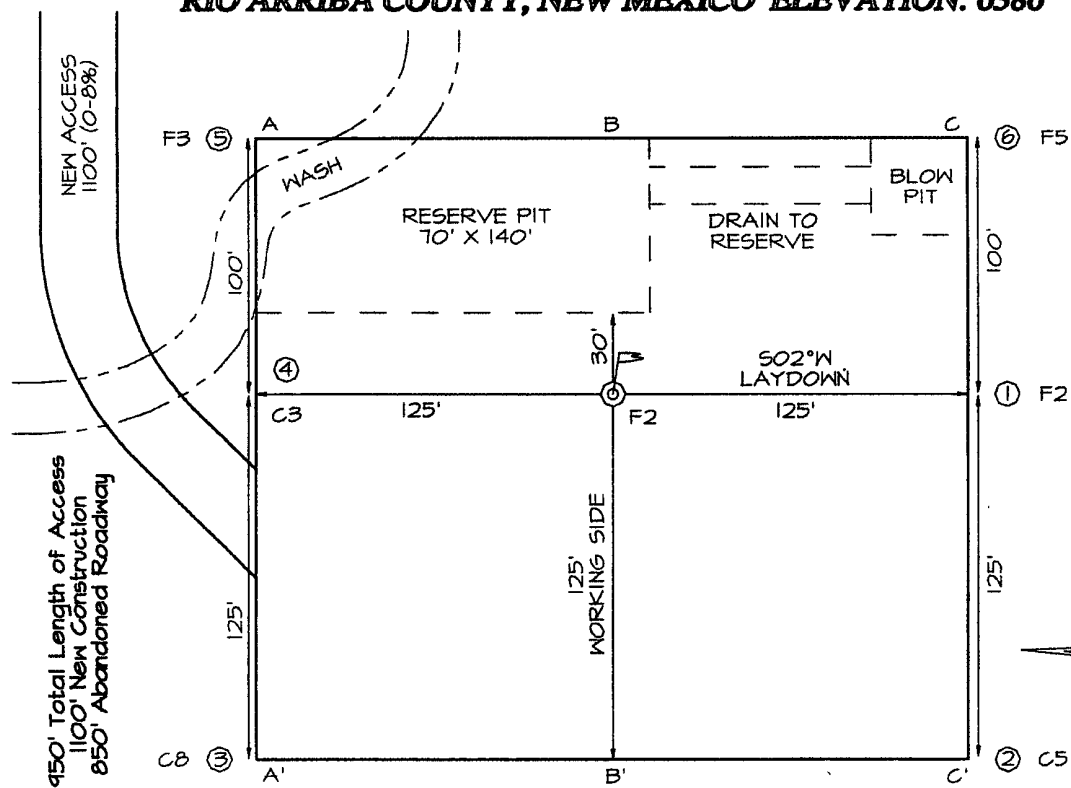
### Potential Hazards:

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

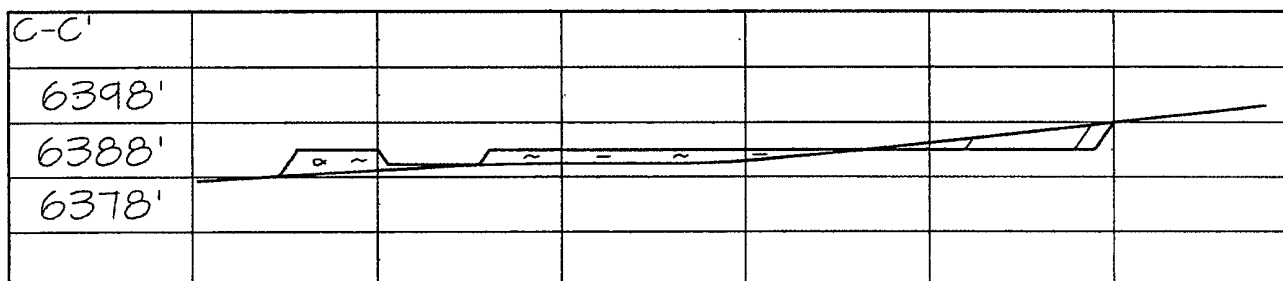
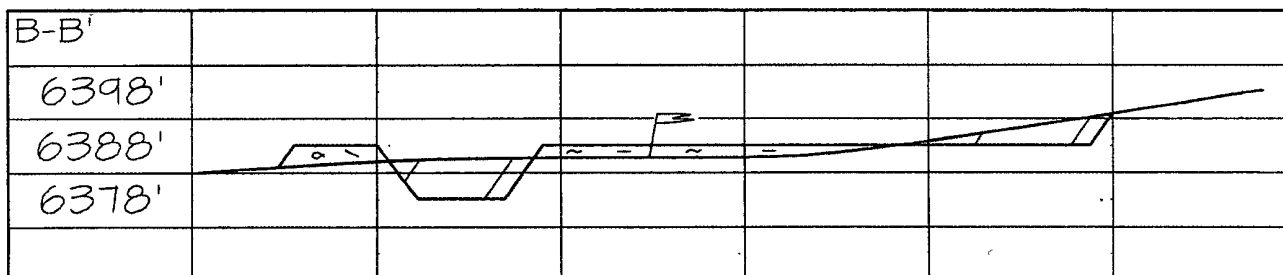
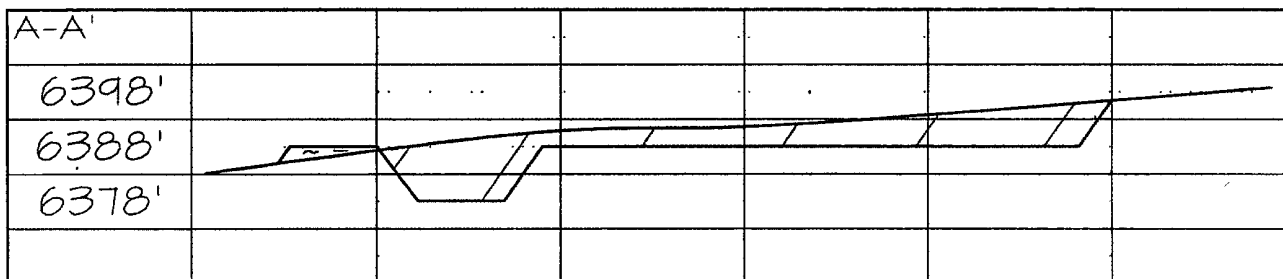
### Mud System:

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/qt 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 #9C**  
**380' FSL & 1135' FWL, SECTION 11, T31N, R6W, NMPM**  
**RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6386'**



**LATITUDE: 36.90793° N**  
**LONGITUDE: 107.43736° W**  
 DATUM: NAD1983



# 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)

