

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-078765

6. If Indian, Allottee or Tribe Name

Rosa Unit ~~NMM~~ - 6784070-FC

8. Lease Name and Well No.

208Y

9. API Well No.

30-045-33854

10. Field and Pool, or Exploratory

Basin Fruitland Coal

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

A Sec 16 T31N, R6W

12. County or Parish

San Juan

13. State

NM

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) 634-4206

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

At surface 605' FNL & 440' FEL, Lot A, Sec. 16, T31N, R6W

At proposed prod. zone 660' FNL & 660' FWL, Lot D, Sec. 15, T31N, R6W

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

Approx. 20 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) 1500'

16. No. of Acres in lease

2,460.23

17. Spacing Unit dedicated to this well

335.19 W/2 Sec 16

18. Distance from proposed location\*

to nearest well, drilling, completed.

applied for, on this lease, ft.

50'

19. Proposed Depth

3,543'

20. BLM/BIA Bond No. on file

UT0899 LT3000178

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

6,326 GR

22. Approximate date work will start\*

Done

23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore C<sub>2</sub> 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

Name (Printed/Typed)

Date

Title

Larry Higgins

7-17-06

Approved by (Signature)

Name (Printed/Typed)

Date

Title

Office

PFO

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 drill a directional 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 Reclamation, with minerals administered by the Bureau of Land Management, Farmington Field Office.

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. A 160 20 foot pipeline tie would be required for this location.

THIS APD IS TO REPLACE ROSA UNIT #208A

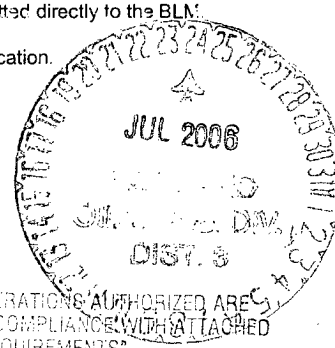
PK

HOLD UP FOR directional  
survey

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

NMOCD

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



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>30-045-33854</b>		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 208Y
*GRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6324'

<sup>10</sup> Surface Location

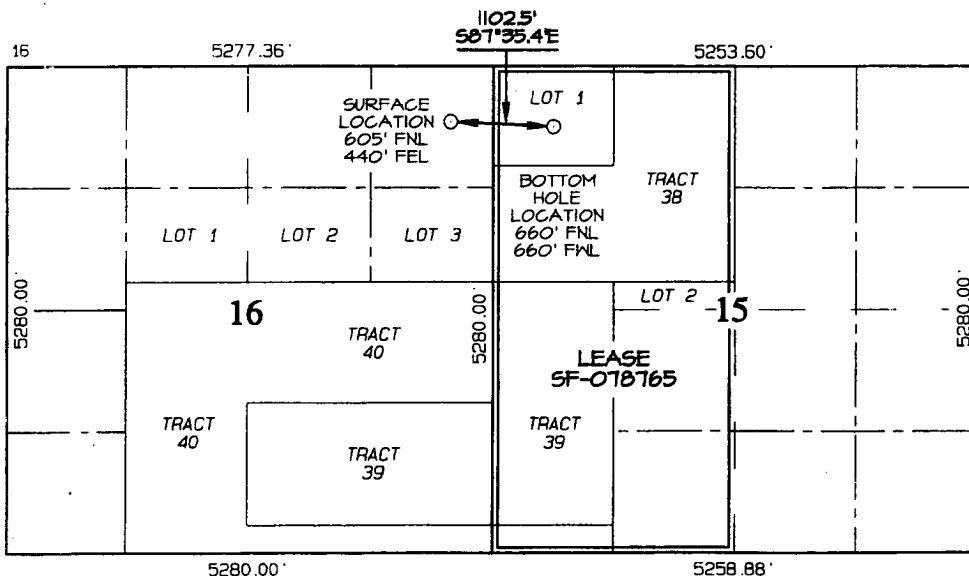
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	16	31N	6W		605	NORTH	440	EAST	SAN JUAN

<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
D	15	31N	6W		660	NORTH	660	WEST	SAN JUAN

<sup>12</sup> Dedicated Acres 320.0 Acres - (W/2) <b>335.19</b>	<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



<sup>17</sup> OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature *Larry Higgins*  
Printed Name **LARRY HIGGINS**  
Title **DRILLING COM**  
Date **7-17-06**

<sup>18</sup> 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 of Survey: **JULY 9, 2006**

Signature and Seal of Professional Surveyor



**JASON C. EDWARDS**  
Certificate Number 15269

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 Ric 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

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

Form C-103  
May 27, 2004

<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.)		WELL API NO. <b>30-046-33854</b>
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other		5. Indicate Type of Lease FEDERAL <input checked="" type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator <b>Williams Production Company, LLC</b>		6. State Oil & Gas Lease No. <b>NMSF-078765</b>
3. Address of Operator <b>P.O. Box 640, Aztec, NM</b>		7. Lease Name or Unit Agreement Name <b>Rosa</b>
4. Well Location Unit Letter <b>A</b> <b>605</b> feet from the <b>N</b> line and <b>440</b> feet from the <b>E</b> line Section <b>15</b> Township <b>31N</b> Range <b>06W</b> NMPM County <b>Rio Arriba</b>		8. Well Number <b>208X</b>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <b>6326' GR</b>		9. OGRID Number <b>120782</b>
Pit or Below-grade Tank Application <input checked="" type="checkbox"/> or Closure <input type="checkbox"/>		10. Pool name or Wildcat <b>Basin Fruitland Coal</b>
Pit type <b>Drig/Completion</b> Depth to Groundwater <b>&gt;100' ft</b> Distance from nearest fresh water well <b>&gt;1000 ft</b> Distance from nearest surface water <b>&gt;500' ft</b>		
Pit Liner Thickness: <b>12</b> mil Below-Grade Tank: Volume <b>bbbls</b> 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 ☐

SUBSEQUENT REPORT OF:  
REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: ☐

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 Michael K. Lane TITLE EH&S Specialist DATE 3/15/06

Type or print name Michael K. Lane E-mail address: myke.lane@williams.com Telephone No. 505-634-4219

For State Use Only

APPROVED BY: [Signature] TITLE DEPUTY OIL & GAS INSPECTOR, DIST. 63 DATE JUL 24 2006  
Conditions of Approval (if any):



## WILLIAMS PRODUCTION COMPANY

### Operations Plan

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

**DATE:** 7/10/2006

**WELLNAME:** Rosa Unit #208Y      **FIELD:** Basin Fruitland Coal

**BH LOCATION:** NWNW Sec 15-31N-6W      **SURFACE:** BOR  
San Juan, NM

**SURF. LOCATION:** NENE Sec 16-31N-6W

**ELEVATION:** 6,326' GR      **MINERALS:** BLM

**TOTAL DEPTH:** 3,543'      **LEASE #** SF-078765

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

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

NAME	TVD	MD	NAME	TVD	MD
San Jose	Surface	Surface	Top Coal	3,045	3,333
Nacimiento	1,165	1,189	Bottom Coal	3,155	3,443
Ojo Alamo	2,335	2,597	Pictured Cliffs	3,155	3,443
Kirtland	2,450	2,721	TD	3,255	3,543
Fruitland	2,910	3,197			

**B. LOGGING PROGRAM:** None

**C. 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. Treat for lost circulation as necessary. Expect 100% returns prior to cementing. Notify Engineering of any mud losses. If coal is detected before 3,313' (MD) DO NOT drill deeper until Engineering is contacted.
- B. Drilling Fluid:** Coal section will be drilled with Fruitland Coal water. Mud logger will pick TD .
- C. MUD LOGGING PRORAM:** Mud logger will be on location at drill out below 7" casing to TD.

- D. **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"	+/- 3,313'	7"	20# K-55
Prod. Liner	6-1/4"	+/- 3,213'-3,433'	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. Insert (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 centralizers as needed across selected production intervals.

#### C. CEMENTING:

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

1. **SURFACE:** Use 190 sx (268 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 = 268 cu.ft. Test to 1500#.
2. **INTERMEDIATE:** Lead - 450 sx (941 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 **120% excess in Lead Slurry** to circulate to surface. **No excess in Tail Slurry**. Total volume = 1,011 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**

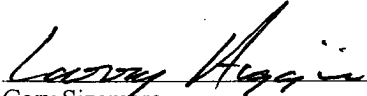
Pressure test 7" casing to 3300# for 15 minutes.

##### **B. STIMULATION**

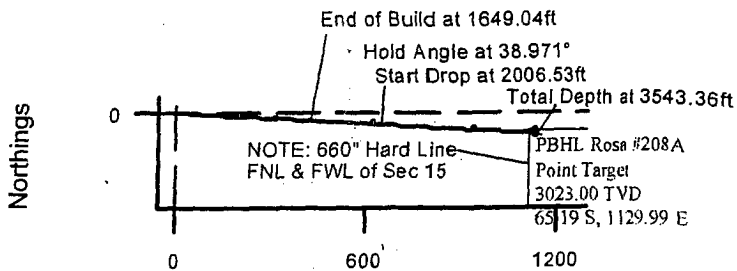
**Cavitate Well** with reciprocation and rotation. Surge wells with water and air and then flow back to pit.  
Cavitate for 2 to 3 weeks. Maximum pressure not expected to exceed 2,000 psi.

##### **C. RUNNING TUBING**

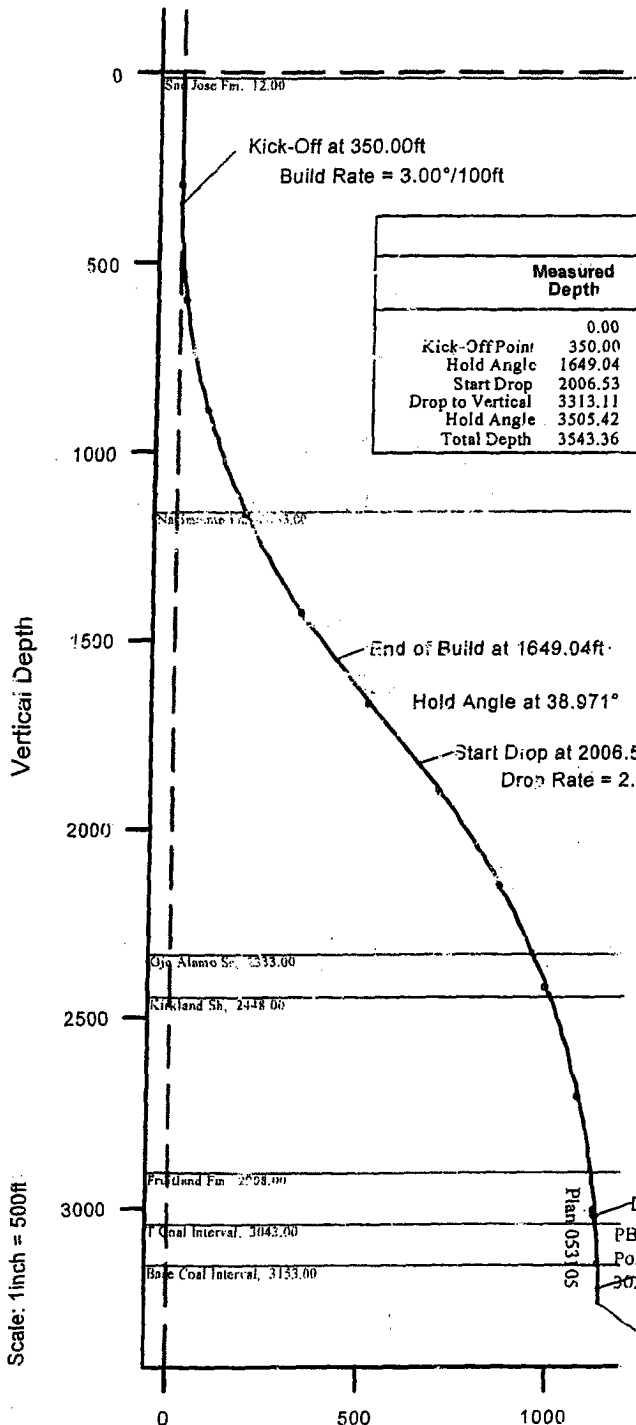
1. Fruitland Coal: Run 2-7/8", 4.7#, J-55, EUE tubing with a SN (1.375" ID) on top of bottom joint. Land tubing approximately 50' above TD.

  
Gary Sizemore  
for Sr. Drilling Engineer

New Mexico  
San Juan County  
Sec. 16-T31N-R06W  
Rosa Unit #208A 208Y  
Plan 053105



Scale: 1 inch = 600ft Reference is True North  
Eastings



Plan 053105 Proposal Data

	Measured Depth	Incl.	Azim.	Vertical Depth	Northings	Eastings	Vertical Section	Dogleg Rate
	0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
Kick-Off Point	350.00	0.000	0.000	350.00	0.00 N	0.00 E	0.00	0.00
Hold Angle	1649.04	38.971	93.302	1551.16	24.48 S	424.31 E	424.31	3.00
Start Drop	2006.53	38.971	93.302	1829.10	37.43 S	648.77 E	649.77	0.00
Drop to Vertical	3313.11	5.000	93.302	3023.00	65.19 S	1129.99 E	1131.72	2.60
Hold Angle	3505.42	0.000	0.000	3215.06	65.68 S	1138.36 E	1140.10	2.60
Total Depth	3543.36	0.000	0.000	3253.00	65.68 S	1138.36 E	1140.10	0.00

Rosa Unit #208A Surface Location

RKB Elevation:	6338.00ft above Mean Sea Level
Ref. NE Corner of Sec. 16:	605.00 S, 4817.36 E
Ref. Global Coordinates:	2149005.23 N 609136.61 E
Ref. Geographical Coordinates:	36° 54' 19.0633" N, 107° 27' 36.2177" W

Plan 053105 Bottom Hole Location

Ref. RKB(6326'+12'KB):	3253.00ft
Ref. Ground Level:	3374.00ft
Ref. Mean Sea Level:	-3085.00ft
Ref. Wellhead:	65.68 S, 1138.36 E (True North)
Ref. NE Corner of Sec. 16:	670.48 S, 5955.73 E (True North)
Ref. Global Coordinates:	2148944.01 N, 610275.22 E
Ref. Geographical Coordinates:	36° 54' 18.4136" N, 107° 27' 22.2015" W

Section Azimuth: 92.365° (True North)

Vertical Section

Prepared by:  
Dennis Cook

Date/Time:  
1 June, 2005 - 10:24

Checked:

Approved:

Measure Depth (ft)	Incl. Angle (Deg)	Drift Direction (Deg)	True Vertical Depth	Vertical Section (ft)	Local Coordinates N-S (ft)	E-W (ft)	Dogleg Severit (°/100ft)	Lease Calls FNL-FSL (ft)	FEL-FWL (ft)	Global Coordinates Grid Y (ft)	Grid X (ft)
Base Coal Interval											
3443.35	1.614	93.302	3153.00	1139.23	65.43 S	1137.50 E	2.60	370.43 FNL	5954.86 FWL	2148944.05 N	610274.34 E
3500.00	0.141	93.302	3209.64	1140.09	65.48 S	1138.37 E	2.60	370.48 FNL	5955.73 FWL	2148944.01 N	610275.21 E
End of Drop at 3505.42ft											
3505.42	0.000	0.000	3215.06	1140.10	65.48 S	1138.37 E	2.60	670.48 FNL	5955.73 FWL	2148944.01 N	610275.22 E
Total Depth at 3543.36ft											
3543.36	0.000	0.000	3253.00	1140.10	65.48 S	1138.37 E	0.00	670.48 FNL	5955.73 FWL	2148944.01 N	610275.22 E

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to True North.  
Vertical depths are relative to RKB(6326 +12' KB). Northings and Eastings are relative to Wellhead.

Based upon Minimum Curvature type calculations, at a Measured Depth of 3543.36ft.,  
The Bottom Hole Displacement is 1140.25ft., in the Direction of 93.302° (True).



## 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.

Williams Production Company, LLC  
Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

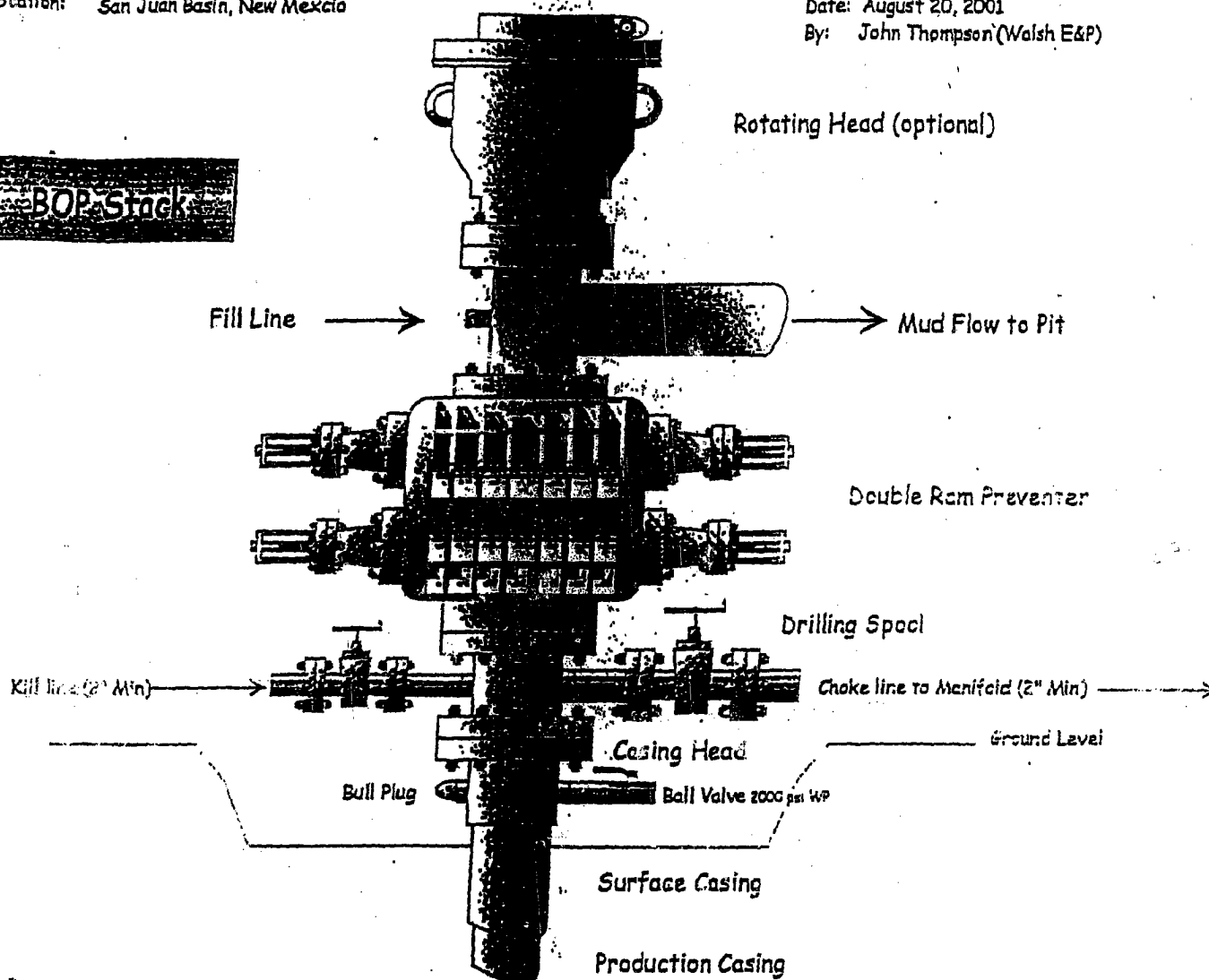
Typical BOP setup

Location: San Juan Basin, New Mexico

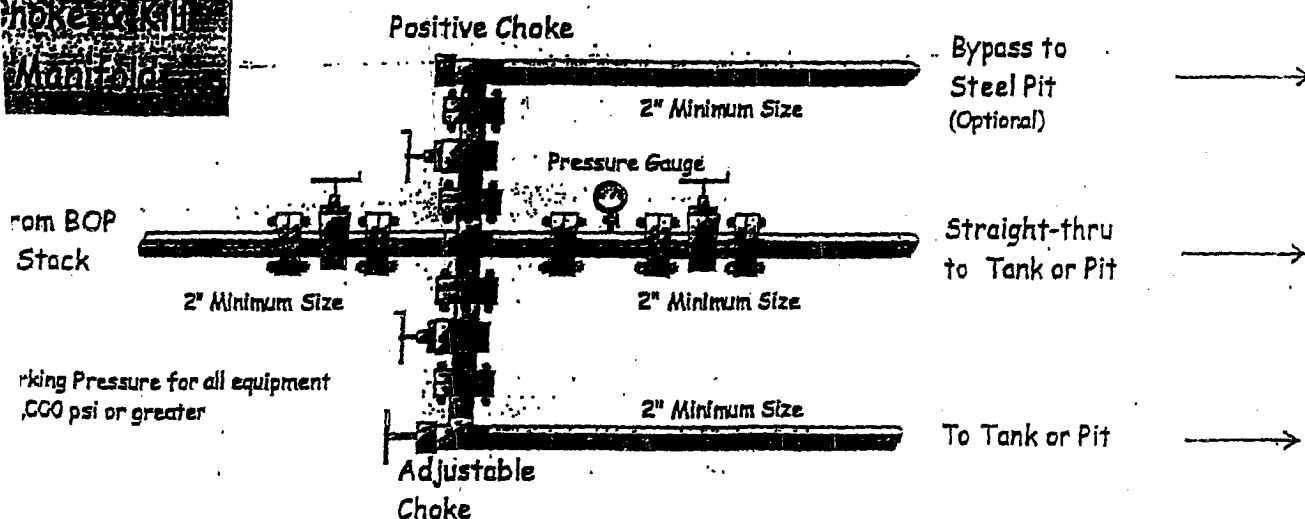
Date: August 20, 2001

By: John Thompson (Walsh E&P)

BOP Stack



Choke & Kill Manifold



Working Pressure for all equipment  
5000 psi or greater