

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK <b>DRILL</b> <input checked="" type="checkbox"/> <b>DEEPEN</b> <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. <b>SF- 078771</b>	
1b. TYPE OF WELL <b>OIL</b> <input type="checkbox"/> <b>GAS</b> <input checked="" type="checkbox"/> <b>OTHER</b> <input type="checkbox"/> <b>SINGLE ZONE</b> <input checked="" type="checkbox"/> <b>MULTIPLE ZONE</b> <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR <b>Williams Production Company, LLC</b>		7. UNIT AGREEMENT NAME <b>Rosa Unit</b>	
3. ADDRESS OF OPERATOR <b>c/o Walsh Engineering 7415 E. Main St., Farmington, NM 87402 (505) 327-4892</b>		8. FARM OR LEASE NAME, WELL NO. <b>8 C</b>	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements) <b>At Surface 660' FSL and 2025' FWL</b> <b>At proposed Prod. Zone</b>		9. API WELL NO. <b>30-039-26944</b>	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* <b>24 miles NE of Blanco, NM</b>		10. FIELD AND POOL OR WILDCAT <b>Blanco Mesaverde</b>	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) <b>660'</b>		11. SEC., T., R., M., OR BLK AND SURVEY OR AREA <b>N Sec. 26, T31N, R6W</b>	
16. NO. OF ACRES IN LEASE <b>2560</b>		12. COUNTY OR PARISH <b>Rio Arriba</b>	
17. NO. OF ACRES ASSIGNED TO THIS WELL <b>320 W/A</b>		13. STATE <b>NM</b>	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT. <b>400'</b>		19. PROPOSED DEPTH <b>6091'</b>	
20. ELEVATIONS (Show whether DIRECTIONAL or NOT) <b>6429'</b>		21. APPROX. DATE WORK WILL START <b>April 15, 2002</b>	
22. APPROX. DATE WORK WILL START <b>April 15, 2002</b>			
23. PROPOSED CASING AND CEMENTING PROGRAM			
SIZE OF HOLE	SIZE OF CASING	WEIGHT/FOOT	SETTING DEPTH
12-1/4"	9-5/8"	36.0#	+/- 250'
8-3/4"	7"	20.0#	+/- 3731'
6-1/4"	4-1/2"	10.5#	+/- 6091'
QUANTITY OF CEMENT			
~180 cu.ft. Type III with 2% CaCl <sub>2</sub>			
~415 cu.ft. 65/35 poz & ~250 cu.ft. Type I			
~157 cu.ft. 50/50 poz & ~258 cu.ft. PL HS			

Williams Production Company proposes to drill a vertical well to develop the Mesa Verde formation at the above described location in accordance with the attached drilling and surface use plans.

This location has been archaeologically surveyed by Independent Contract Archaeology. Copies of their report have been submitted directly to your office.

This APD also is serving as an application to obtain BLM road and pipeline right-of-ways. This well will not require any new access road (see Pipeline & Well Plats #3 & #4). The well will be accessed by an existing road that crosses the NE SW, SW SW, SE SW of section 26, NW/NE, NE/NE of section 35 and NW NW of section 36 all of T31N, R6W, where it joins the main "Rosa Road".

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED <u>John C. Thompson</u> TITLE <u>John C. Thompson, Agent</u> DATE <u>3/1/02</u>	
(This space for Federal or State office use)	
PERMIT NO. <u>4/5/02</u>	APPROVAL DATE <u>4/5/02</u>
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: <u>David J. Mankiewicz</u>	
APPROVED BY <u>AFM</u>	TITLE <u>AFM</u> DATE <u>4/5/02</u>

\*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

NMOCD

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

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

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-26944		*Pool Code 72319	*Pool Name Blanco Mesaverde
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 8C
*GRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6429'

<sup>10</sup> Surface Location

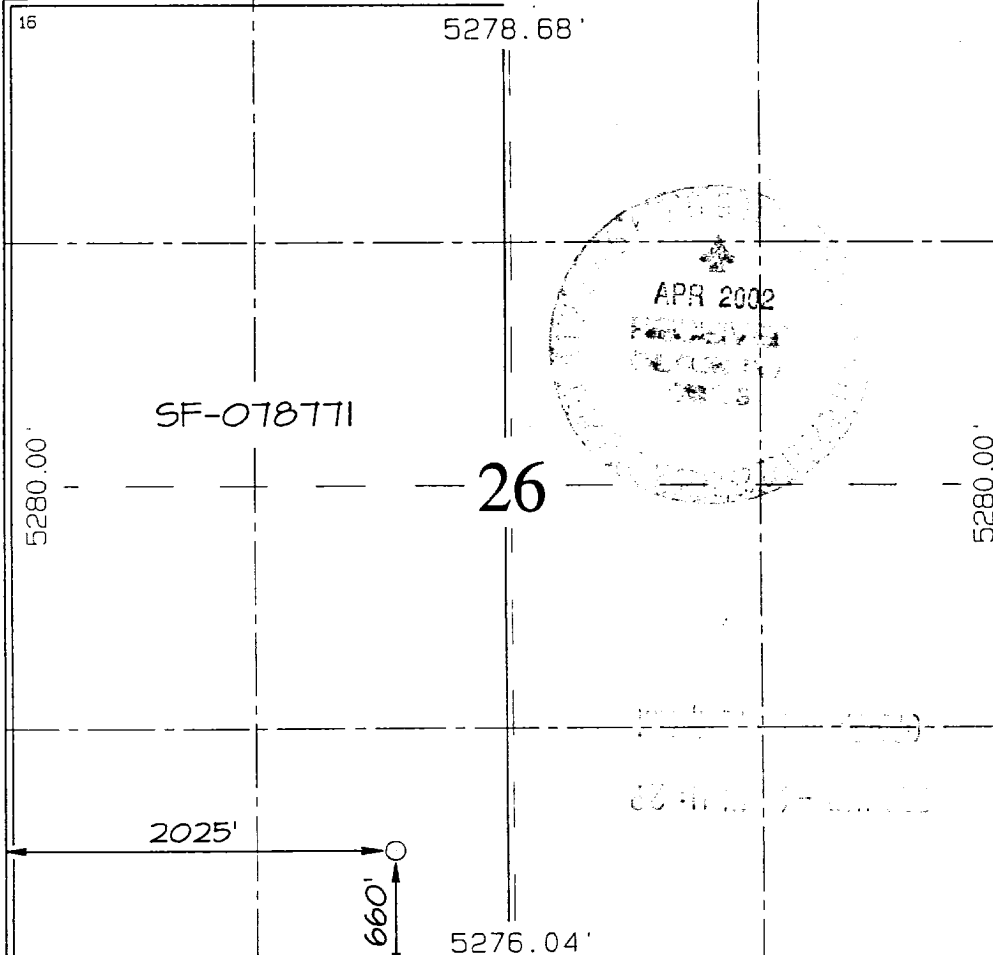
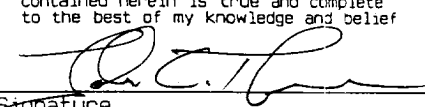
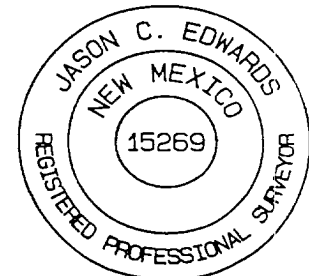
UL or lot no. N	Section 26	Township 31N	Range 6W	Lot Idn	Feet from the 660	North/South line SOUTH	Feet from the 2025	East/West line WEST	County RIO ARriba
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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<sup>12</sup> Dedicated Acres 320.0 Acres - (W/2)	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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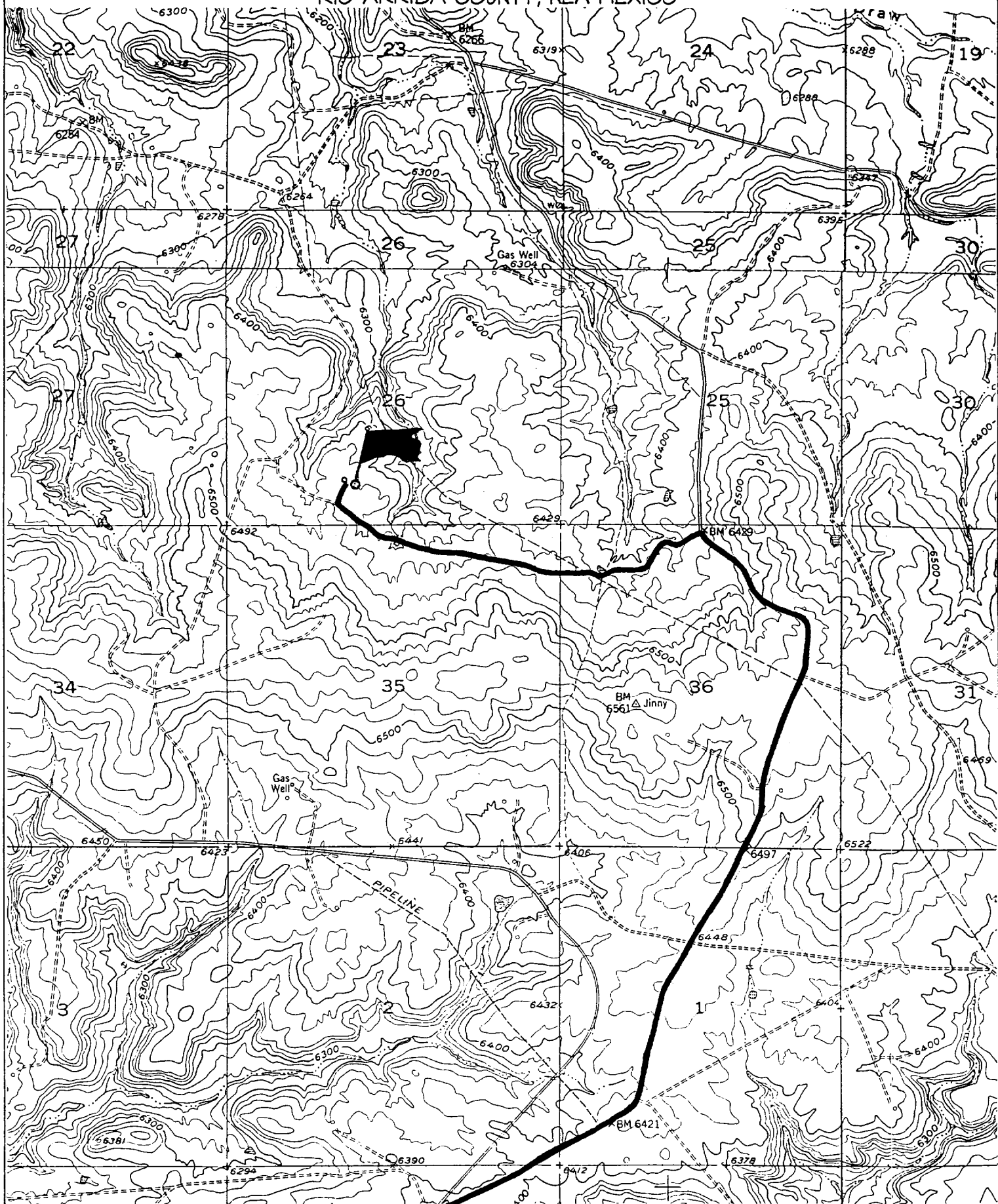
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<div><p><sup>16</sup></p><p>5278.68'</p><p>SF-078771</p><p>26</p><p>5280.00'</p><p>2025'</p><p>660'</p><p>5276.04'</p></div>	<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></p> <p>Signature John C. Thompson</p> <p>Printed Name Agent/ Engineer</p> <p>Title 3/1/02</p> <p>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: FEBRUARY 14, 2002</p> <p>Signature and Seal of Professional Surveyor</p> <div><p>JASON C. EDWARDS</p><p>Certificate Number 15269</p></div>

WILLIAMS PRODUCTION COMPANY ROSA UNIT #8C

660' FSL & 2025' FWL, SECTION 26, T31N, R6W, N.M.P.M.

RIO ARriba COUNTY, NEW MEXICO





## WILLIAMS PRODUCTION COMPANY

### Operations Plan

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

<b><u>DATE:</u></b>	3/1/2002	<b><u>FIELD:</u></b>	Blanco MV
<b><u>WELL NAME:</u></b>	Rosa Unit 8C	<b><u>SURFACE:</u></b>	BLM
<b><u>LOCATION:</u></b>	SE/4 SW/4 Sec 26-31N-6W Rio Arriba, NM	<b><u>MINERALS:</u></b>	BLM
<b><u>ELEVATION:</u></b>	6429' GR	<b><u>LEASE #</u></b>	SF-78771
<b><u>MEASURED DEPTH:</u></b>	6091'		

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

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

	<b><u>MD</u></b>		<b><u>MD</u></b>
Ojo Alamo	2481'	Cliff House	5386'
Kirtland	2591'	Menefee	5431'
Fruitland	3001'	Point Lookout	5641'
Pictured Cliffs	3256'	Mancos	6001'
Lewis	3576'	<b>Total Depth</b>	6091'

##### **B. LOGGING PROGRAM:** IND/GR, CDL/SNL. Log the Mesa Verde from TD Intermediate Casing shoe. (selected intervals by on-site Geologist). ***Subject to change as wellbore conditions dictate.***

##### **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. 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.

##### **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 rams will be tested to 1500 psi. The drum brakes will be inspected and tested each tour. All tests, inspections and SPR's 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"	250'	9-5/8"	36# K-55
Intermediate	8-3/4"	3731'	7"	20# K-55
Prod. Liner	6-1/4"	3631'-6091'	4-1/2"	10.5# 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 (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 one Turbulent centralizer on each of the bottom (3) joints and one standard centralizer every (4) joints to the surface casing. Total centralizers = (26) regular and (3) turbulent.
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 5630'. Place one positive standoff turbolizer every other joint. Total turbolizers is 34.

#### C. CEMENTING:

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

1. SURFACE: Slurry: 140sx (180 cu.ft.) of "Type III" + 2% CaCl<sub>2</sub> + 1/4 # of cello-flake/sk (Yield = 1.39 cu.ft./sk, Weight = 14.5 #/gal.). The 125% excess should circulate cement to the surface. WOC 12 hours. Test csg to 1500psi.
2. INTERMEDIATE: Lead: 415sx (871 ft<sup>3</sup>) of "Type III" 65/35 poz + 8% gel + 1% CaCl<sub>2</sub> + 1/4 # cello-flake/sk (Yield = 2.09 ft<sup>3</sup>/sk, Weight = 12.1 #/gal.). Tail: 180x (250 ft<sup>3</sup>) of class "Type III" + 1% CaCl<sub>2</sub> + 1/4 # cello-flake/sk. (Yield = 1.39 ft<sup>3</sup>/sk, Weight = 14.5#/gal.). The 100% excess in lead and tail should circulate cement to the surface. Total volume = 1121 ft<sup>3</sup>. WOC 12 hours. Run a temperature survey after 8 hours if cement is not circulated to the surface. Test csg. to 1500psi.
3. PRODUCTION LINER: Scavenger: 30sx (157 ft<sup>3</sup>) of Premium Light HS + 0.65% FL-52 + .32% CD-32 (Weight = 11 #/gal). Lead: 80sx (157 ft<sup>3</sup>) of Premium Light HS + 0.65% FL-52 + .32% CD-32. (Yield = 1.96 cu.ft./sk, Weight = 12.5 #/gal.). Tail: 130sx (258 ft<sup>3</sup>) of Premium Light HS + 0.65% FL-52 + .32% CD-32 + .25 #/sk Celloflake + 4% Phenoseal. (Yield = 1.98 ft<sup>3</sup>/sk, Weight = 12.5 #/gal.). Displace cement at a minimum of 8 BPM. The 50% excess in lead and tail should cover liner top. Total volume 415ft<sup>3</sup>. WOC 12 hours.

**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**

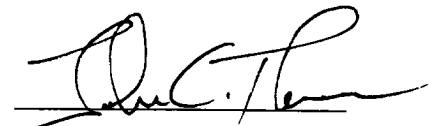
1. Pressure test 7" & 4-1/2" casing to 3300# for 15 minutes.

**C. STIMULATION**

1. Stimulate with approximately 80,000# of 20/40 sand in slick water.
2. Isolate Point Lookout with a DBP.
3. Perforate the Menefee/Cliff House as determined from the open hole logs.
4. Stimulate with approximately 80,000# of 20/40 sand in slick water.
5. 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.

  
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John C. Thompson  
Engineer

# Walsh Engineering & Production

## Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

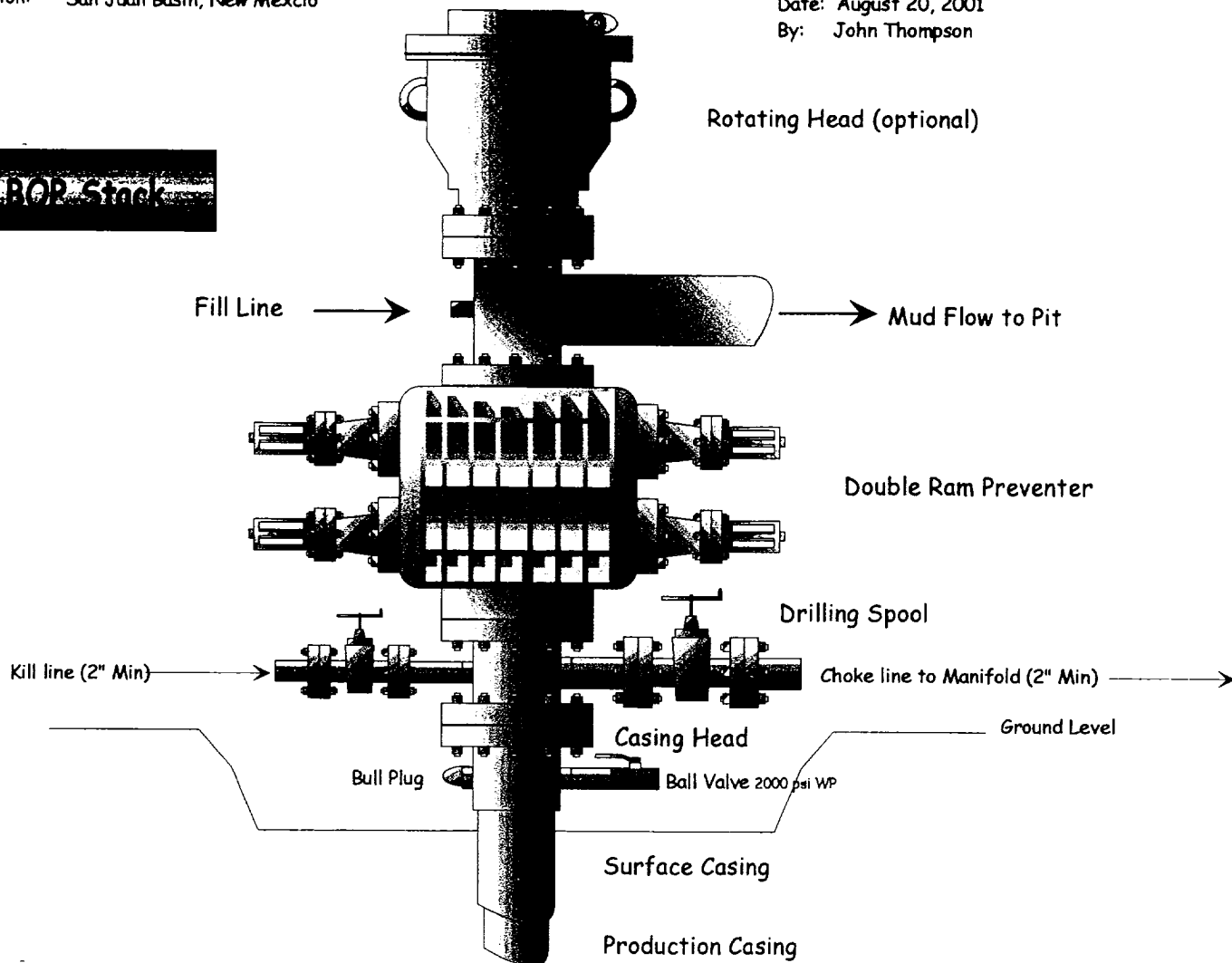
### Typical Mesaverde/Dakota BOP setup

Location: San Juan Basin, New Mexico

Date: August 20, 2001

By: John Thompson

**BOP Stack**



**Choke & Kill Manifold**

