Form 3160-3
(September 2001)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMSF-078766

6. If Indian, Allottee or Tribe Name:

1a. Type of Work: ☒ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.: 260A

2. Name of Operator: Williams Production Company, LLC

9. API Well No.: 30-039-29546

3a. Address: P.O. Box 316 Ignacio, CO 81137

3b. Phone No. *(include area code)*: (970) 563-3308

10. Field and Pool, or Exploratory: Basin Fruitland Coal

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

At surface: 790' FSL & 1960' FEL

At proposed prod. zone: same

11. Sec., T., R., M., or Blk. and Survey or Area: O Section 21, 31N, 6W

14. Distance in miles and direction from nearest town or post office*: approximately 30 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): 790'

16. No. of Acres in lease: 2,552.71

17. Spacing Unit dedicated to this well: 320.00 (S/2)

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 50'

19. Proposed Depth: 3,257'

20. BLM/BIA Bond No. on file: UT0847

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 6,375' GR

22. Approximate date work will start*: June 1, 2005

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: 5/10/05

Title: Drilling COM

Approved by *(Signature)*: Name *(Printed/Typed)* — Date: 6-15-05

Title: AFM — Office: FFO

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.

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

This location is proposed to be twinned with the proposed Rosa 100B well.

This APD is also serving as an application to obtain a pipeline right-of-way. A 170.00-foot pipeline tie would be required for this location.

RECEIVED
070 FARMINGTON NM
2005 MAY 12 PM 3 05

NMOCD

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

| [1] API Number | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-039-29546 | 71629 | BASIN FRUITLAND COAL |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 17033 | ROSA UNIT | 260A |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 120782 | WILLIAMS PRODUCTION COMPANY | 6375' |

## [10] Surface Location

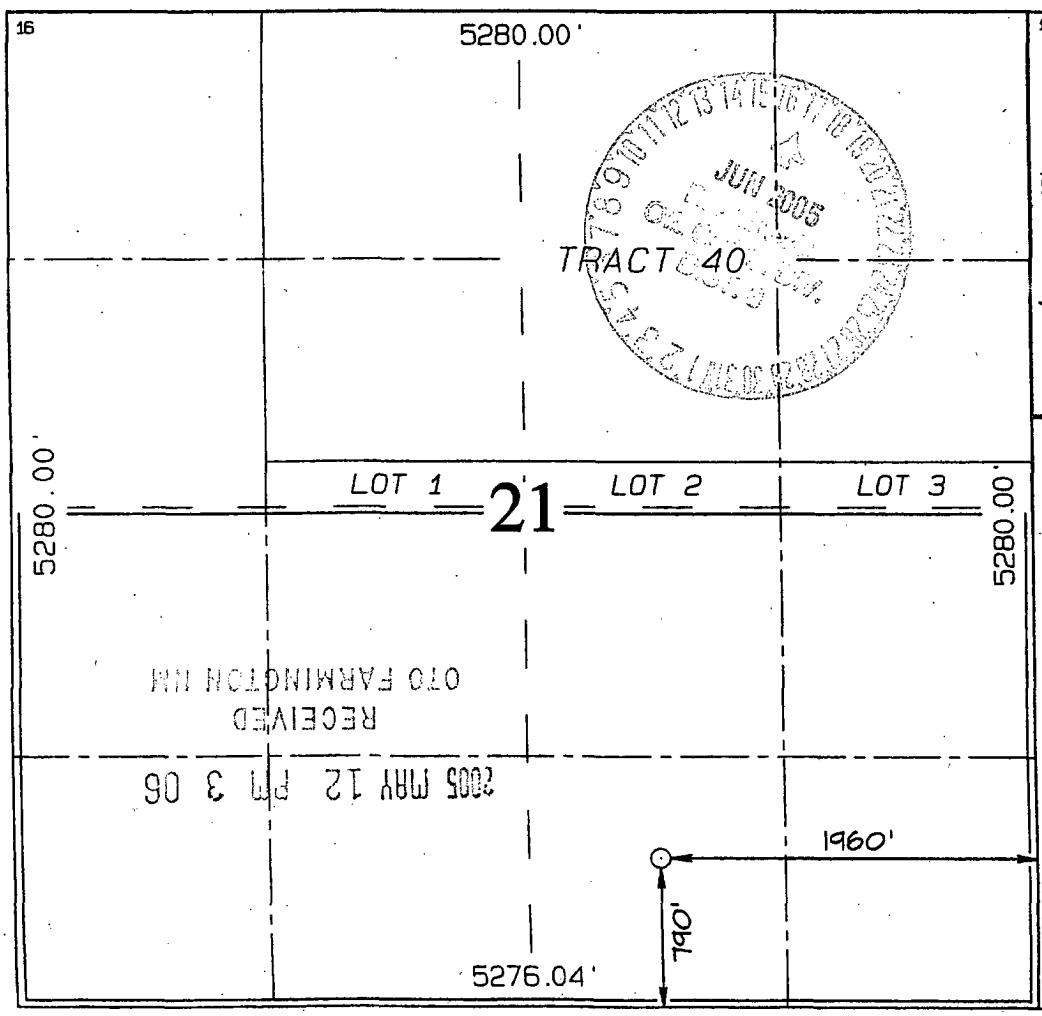
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| O | 21 | 31N | 6W | | 790 | SOUTH | 1960 | EAST | RIO ARRIBA |

## [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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| 320.0 Acres - (S/2) | | | |

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

Signature: Larry Higgins

Printed Name: Larry Higgins

Title: Drilling Coord

Date: 5-10-05

## [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: JANUARY 27, 2003

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED 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 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

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

Form C-103
May 27, 2004

WELL API NO.

5. Indicate Type of Lease FEDERAL X STATE ☐ FEE ☐

6. State Oil & Gas Lease No.
Federal NMSF-0078766

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.)

7. Lease Name or Unit Agreement Name
Rosa Unit

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

8. Well Number 260A

2. Name of Operator
Williams Exploration and Production Company

9. OGRID Number 120782

3. Address of Operator
P.O. Box 316, Ignacio, CO 81137

10. Pool name or Wildcat
Basin Fruitland Coal

4. Well Location
Unit Letter O: 790 feet from the south line and 1960 feet from the east line
Section 21 Township 31N Range 6W NMPM County Rio Arriba

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
6,257' 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: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| PERFORM REMEDIAL WORK | ☐ | PLUG AND ABANDON | ☐ | REMEDIAL WORK | ☐ | ALTERING CASING | ☐ |
| TEMPORARILY ABANDON | ☐ | CHANGE PLANS | ☐ | COMMENCE DRILLING OPNS. | ☐ | P AND A | ☐ |
| PULL OR ALTER CASING | ☐ | MULTIPLE COMPL | ☐ | 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.

Reserve pit to be constructed in accordance with NMOCD Interim Pit and Below-grade Tank Guidelines

Reserve pit to be located approximately 25 feet south of the well head, in the northwest corner of the well pad

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 5-10-2005

Type or print name Larry Higgins E-mail address: larry.higgins@williams.com Telephone No. (970) 563-3308

**For State Use Only**

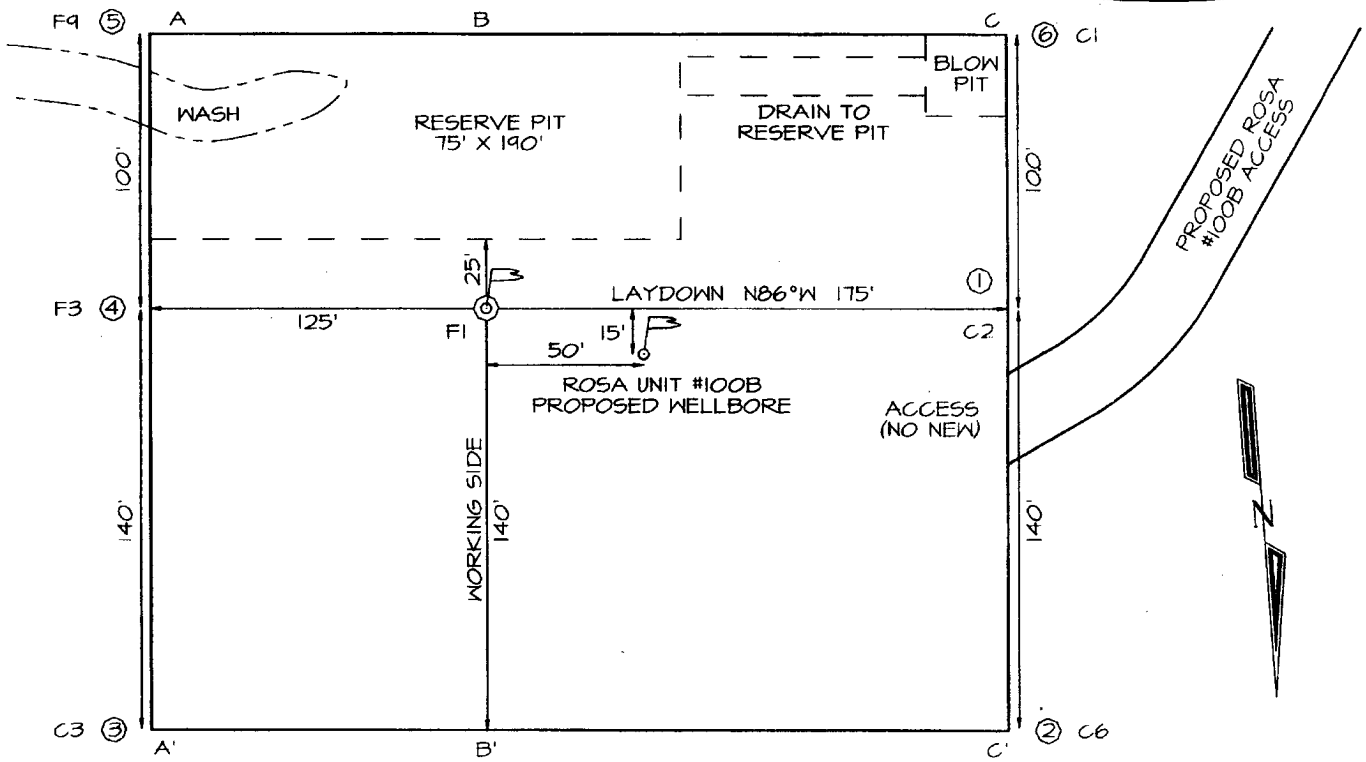
APPROVED BY: _____ TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE JUN 17 2005

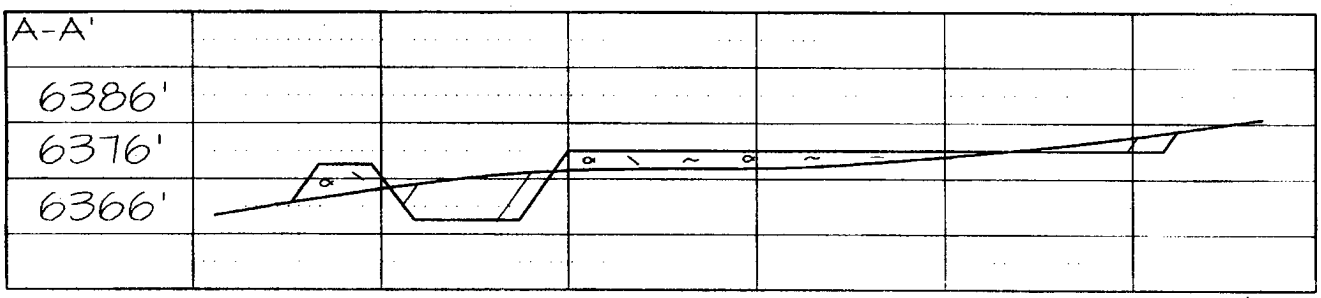
Conditions of Approval (if any):

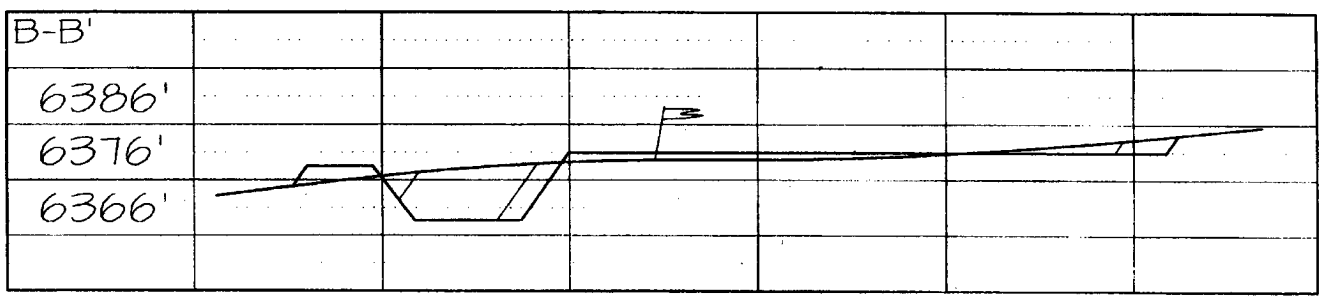
Plat #1 Location Layout

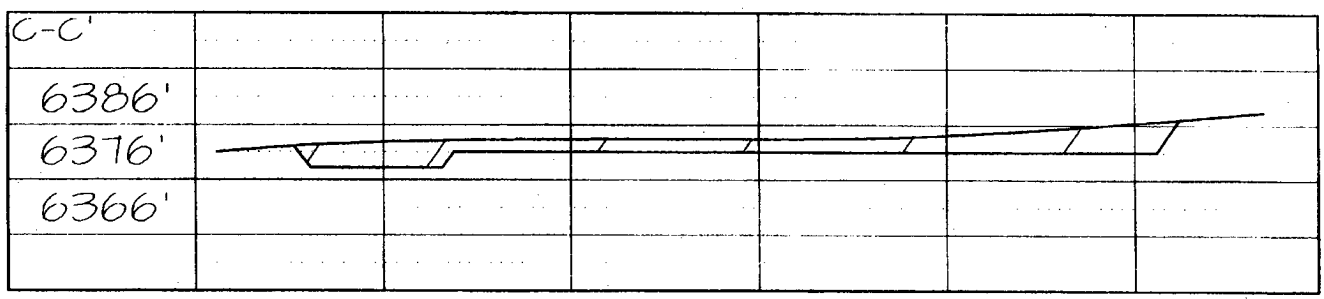
# WILLIAMS PRODUCTION COMPANY ROSA UNIT #260A
## 790' FSL & 1960' FEL, SECTION 21, T31N, R6W, NMPM
## RIO ARRIBA COUNTY, NEW MEXICO
## GROUND ELEVATION: 6375'

**LATITUDE: 36°52'48"**
**LONGITUDE: 107°27'55"**
DATUM: NAD1927




| FILENAME: 31621OT2 | SHEET 2 OF 3 | NCE SURVEYS, INC. | DRAWN BY: SLE | CHECKED BY: JCE |
|---|---|---|---|---|

# WILLIAMS PRODUCTION COMPANY

## *Operations Plan*

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

| | | | |
|---|---|---|---|
| **DATE:** | **5/10/2005** | | |
| **WELLNAME:** | Rosa Unit #260A | **FIELD:** | Basin Fruitland Coal |
| **LOCATION:** | SWSE Sec. 21-T31N-6W<br>Rio Arriba, NM | **SURFACE:** | BLM |
| **ELEVATION:** | 6,375' GR | **MINERALS:** | BLM |
| **TOTAL DEPTH:** | **3,257'** | **LEASE #** | SF-078766 |

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

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

| NAME | | DEPTH | | NAME | | DEPTH |
|---|---|---|---|---|---|---|
| San Jose | | Surface | | Top Coal | | 3,062 |
| Nacimiento | | 1,112 | | Bottom Coal | | 3,257 |
| Ojo Alamo | | 2,392 | | Pictured Cliffs | | 3,257 |
| Kirtland | | 2,507 | | **TD** | | **3,257** |
| Fruitland | | 2,927 | | | | |

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 **3,042'** DO NOT drill deeper until Engineering is contacted.

B. **Drilling Fluid:** Coal section will be drilled with Fruitland Coal water.

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 rams will be tested to 1500 psi. The surface and intermediate casing strings will be pressure tested to 1500 psi in conjunction with the BOP test before drilling out cement. 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:

| CASING TYPE | HOLE SIZE | DEPTH | CASING SIZE | WT. & GRADE |
|---|---|---|---|---|
| Surface | 12-1/4" | +/- 300' | 9-5/8" | 36# K-55 |
| Intermediate | 8-3/4" | +/- 3,042' | 7" | 20# K-55 |
| Prod. Liner | 6-1/4" | +/- 2,942'- 3,257' | 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 centralizers as needed across selected production intervals.

### C. CEMENTING:

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

1. SURFACE: Use 190 sx (~~264~~ 268 cu.ft.) of "Type III" with 2% $CaCl_2$ and 1/4# of cello-flake/sk (Yield = 1.41 cu.ft./sk, Weight = 14.5 #/gal.). **Use 150% excess** to circulate the surface. WOC 12 hours. Total volume = ~~206~~ 268 cu.ft. Test to 1500#.

2. INTERMEDIATE: Lead - 410 sx (~~852~~ 854 cu.ft.) of "Type III" 65/35 poz with 8% gel, 1% $CaCl_2$ 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% $CaCl_2$ (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 = ~~922~~ 924 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", 6.5#, J-55, EUE tubing with a SN on top of bottom joint. Land tubing approximately 50' above TD.

Gary Sizemore
FOR Sr. Drilling Engineer

# 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 Dadota | 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 Mexcio

Date: August 20, 2001
By: John Thompson (Walsh E&P)