

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL --	5. Lease Number NM-03195 Unit Reporting Number	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator <b>BURLINGTON RESOURCES</b> Oil & Gas Company	7. Unit Agreement Name	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name Sunray H Com 9. Well Number #6M	
4. Location of Well 1170' FSL, 1855' FEL Latitude 36° 49.3, Longitude 107° 51.0	10. Field, Pool, Wildcat Blanco MV/Basin DK 11. Sec., Twn, Rge, Mer. (NMPM) Sec. 11, T-30-N, R-10-W API # 30-045-30128	
14. Distance in Miles from Nearest Town 12 miles from int. Hwy 550 & Hwy 173 in Aztec, NM.	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 1170'		
16. Acres in Lease	17. Acres Assigned to Well MV: S/311.78 DK: E/314.74	
18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 1093'		
19. Proposed Depth 7900'	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 6651' GR	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached		
24. Authorized by: <u>Joel Farrell</u> Regulatory/Compliance Supervisor	Date <u>3-5-01</u>	

PERMIT NO. \_\_\_\_\_ APPROVAL DATE 8/28/01  
APPROVED BY Joel Farrell TITLE \_\_\_\_\_ DATE \_\_\_\_\_

Archaeological Report to be submitted

Threatened and Endangered Species Report to be submitted

NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

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 presentations as to any matter within its jurisdiction.

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II  
811 South First, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

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

OIL CONSERVATION DIVISION

2040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045- 30728	<sup>2</sup> Pool Code 72319/71599	<sup>3</sup> Pool Name Blanco Mesaverde/Basin Dakota
<sup>4</sup> Property Code 7571	<sup>5</sup> Property Name SUNRAY H COM	<sup>6</sup> Well Number 6M
<sup>7</sup> OGRID No. 14538	<sup>8</sup> Operator Name BURLINGTON RESOURCES OIL & GAS, INC.	<sup>9</sup> Elevation 6651'

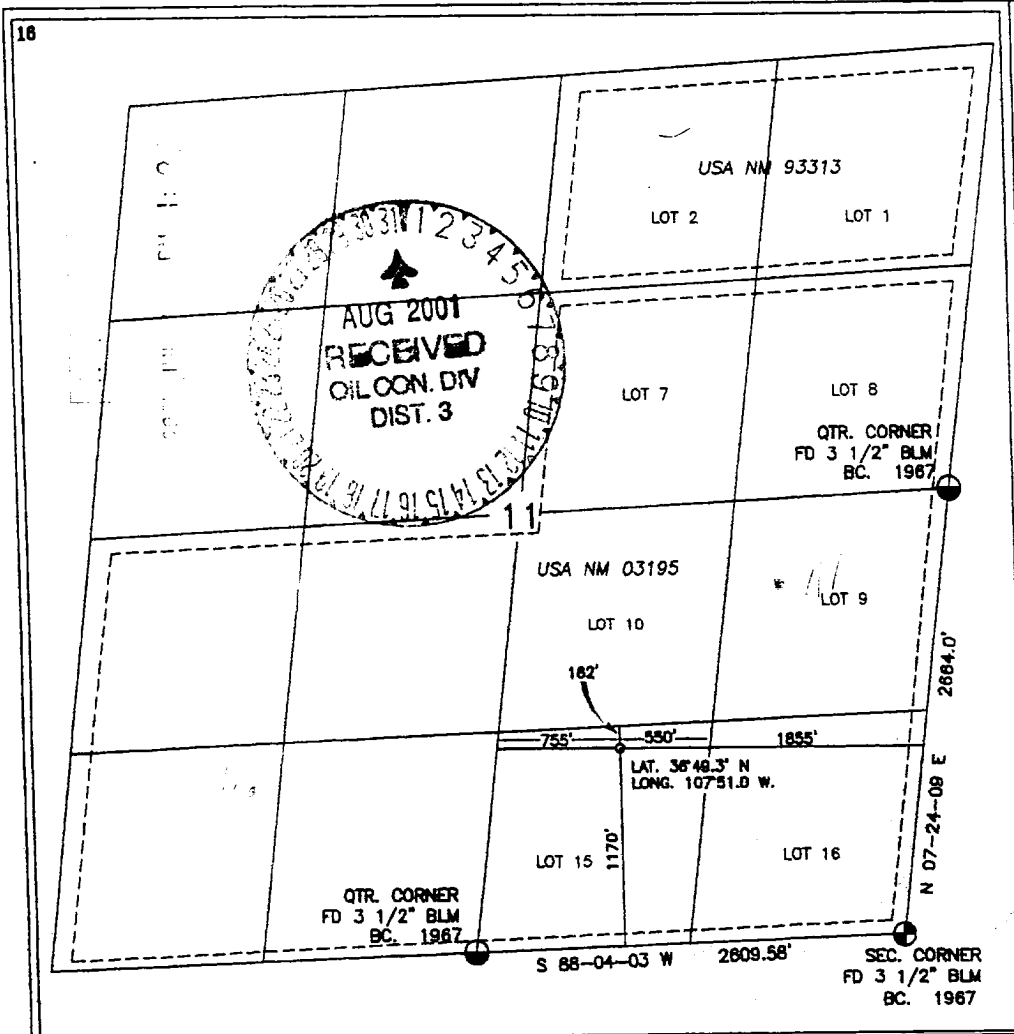
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	11	30-N	10-W		1170	SOUTH	1855	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
<sup>12</sup> Dedicated Acres MV: S/311.78 DK: E/314.74					<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> 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.

*Peggy Cole*  
Signature

Peggy Cole

Printed Name

Regulatory Supervisor

Title

3-5-01

Date

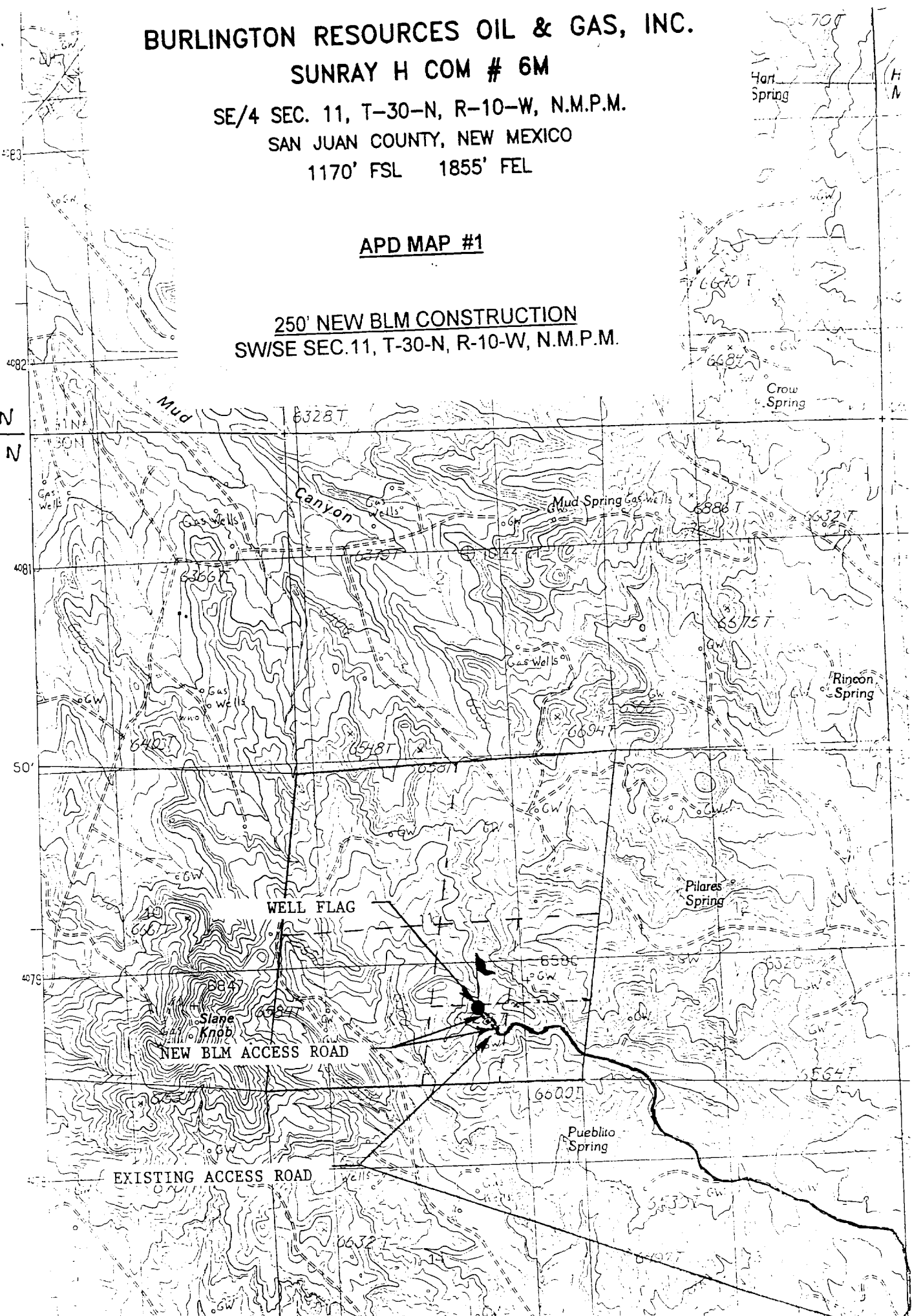
18 SURVEYOR CERTIFICATION

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.

11-20-00  
Date of Survey  
Signature and Seal of Professional Surveyor  
8894  
Certificate Number

1170' FSL      1855' FEL

250' NEW BLM CONSTRUCTION  
SW/SE SEC. 11, T-30-N, R-10-W, N.M.P.M.



## OPERATIONS PLAN

**Well Name:** Sunray H Com #6M  
**Location:** 1170' FSL, 1855' FEL, Sec 11, T-30-N, R-10-W  
San Juan County, NM  
Latitude 36° 49.3, Longitude 107° 51.0  
**Formation:** Blanco Mesa Verde/Basin Dakota  
**Elevation:** 6651' GR

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	San Jose	1983'	
Ojo Alamo	1983'	2133'	aquifer
Kirtland	2133'	2773'	gas
Fruitland	2773'	3313'	gas
Pictured Cliffs	3313'	3413'	gas
Lewis	3413'	4038'	gas
<b>Intermediate TD</b>	<b>3513'</b>		
Mesa Verde	4038'	4348'	gas
Chacra	4348'	4923'	gas
Massive Cliff House	4923'	5123'	gas
Menefee	5123'	5538'	gas
Massive Point Lookout	5538'	5903'	gas
Mancos	5903'	6828'	gas
Gallup	6828'	7568'	gas
Greenhorn	7568'	7623'	gas
Graneros	7623'	7670'	gas
Dakota	7670'		gas
<b>TD</b>	<b>7900'</b>		

### Logging Program:

Open hole - none  
Cased hole - TMD/L, GR/CBL - TD to surface  
Cores - none

### Mud Program:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	<u>Fluid Loss</u>
0- 200'	Spud	8.4-9.0	40-50	no control
200- 3513'	LSND	8.4-9.0	30-60	no control
3513- 7900'	Air/N2	n/a	n/a	n/a

Pit levels will be visually monitored to detect gain or loss of fluid control.

### Casing Program (as listed, the equivalent, or better):

<u>Hole Size</u>	<u>Depth Interval</u>	<u>Csg. Size</u>	<u>Wt.</u>	<u>Grade</u>
12 1/4"	0' - 200'	9 5/8"	32.3#	WC-50
8 3/4"	0' - 3513'	7"	20.0#	J-55
6 1/4"	3413' - 7900'	4 1/2"	10.5#	J-55

### Tubing Program:

0' - 7900'\_\_ 2 3/8" 4.7# J-55

### BOP Specifications, Wellhead and Tests:

#### **Surface to Intermediate TD -**

11" 3000 psi minimum double gate BOP stack (Reference Figure #1).  
After nipple-up prior to drilling out surface casing, rams and casing will be tested to 600 psi for 30 minutes.

#### **Intermediate TD to Total Depth -**

11" 3000 psi minimum double gate BOP stack (Reference Figure #1).  
After nipple-up prior to drilling out intermediate casing, rams and casing will be tested to 1500 psi for 30 minutes.

**Surface to Total Depth -**

2" nominal, 3000 psi minimum choke manifold (Reference Figure #3).

**Completion Operations -**

7 1/16" 3000 psi double gate BOP stack (Reference Figure #2). After nipple-up prior to completion, pipe rams, casing and liner top will be tested to 2000 psi for 15 minutes.

**Wellhead -**

9 5/8" x 7" x 2 3/8" x 3000 psi tree assembly.

**General -**

- Pipe rams will be actuated once each day and blind rams will be actuated once each trip to test proper functioning.
- An upper kelly cock valve with handle available and drill string valves to fit each drill string will be available on the rig floors at all times.
- BOP pit level drill will be conducted weekly for each drilling crew.
- All BOP tests and drills will be recorded in daily drilling reports.
- Blind and pipe rams will be equipped with extension hand wheels.

**Cementing:**

9 5/8" surface casing - cement with 159 sx Class "H" cement with 1/4# flocele/sx and 3% calcium chloride (188 cu.ft. of slurry, 200% excess to circulate to surface). WOC 8 hrs. Test casing to 600 psi for 30 minutes.

Saw tooth guide shoe on bottom. Bowspring centralizers will be run in accordance with Onshore Order #2.

**7" intermediate casing -**

Lead w/365 sx 50/50 Class G/TXI lightweight w/2.5% sodium metasilicate, 2% calcium chloride, 10# gilsonite/sx and 1/2# flocele/sx. Tail w/90 sx 50/50 Class "G" Poz w/2% calcium chloride, 2% gel, 1/4 pps flocele, 5 pps gilsonite (1057 cu.ft. of slurry, 100% excess to circulate to surface.) WOC minimum of 8 hours before drilling out intermediate casing. If cement does not circulate to surface, a CBL will be run during completion operations to determine TOC. Test casing to 1500 psi for 30 minutes.

**See attached alternative intermediate lead slurry.**

7" intermediate casing alternative two stage: Stage collar at 2673'. First stage: cement with 253 sx 50/50 Class "G" Poz w/2% calcium chloride, 2% gel, 1/4 pps flocele, 5 pps gilsonite. Second stage: 312 sx 50/50 Class G/TXI lightweight w/2.5% sodium metasilicate, 2% calcium chloride, 10# gilsonite/sx and 1/2# flocele/sx (1057 cu.ft., 100% excess to circulate to surface).

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. Bowspring centralizers spaced every other joint off bottom, to the base of the Ojo Alamo at 2133'. Two turbolating centralizers at the base of the Ojo Alamo at 2133'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

**4 1/2" Production Casing -**

Cement to cover minimum of 100' of 4 1/2" x 7" overlap. Lead with 448 sx 50/50 Class "G" Poz with 5% gel, 0.25# floccel/sx, 5# gilsonite/sx, 0.1% retardant and 0.25% fluid loss additive (645 cu.ft.), 40% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

Note: If open hole logs are run, cement volumes will be based on 25% excess over caliper volumes.

Cement float shoe on bottom with float collar spaced on top of shoe joint.

Note: To facilitate higher hydraulic stimulation completion work, no liner hanger will be used. In its place, a long string of 4 1/2" casing will be run and cemented with a minimum of 100' of cement overlap between the 4 1/2" x 7" casing strings. After completion of the well, a 4 1/2" retrievable bridge plug will be set below the top of cement in the 4 1/2" x 7" overlap. The 4 1/2" casing will then be backed off above the top of cement in the 4 1/2" x 7" overlap and laid down. The 4 1/2" bridge plug will then be retrieved and the production tubing will be run to produce the well.

- If hole conditions permit, an adequate water spacer will be pumped ahead of each cement job to prevent cement/ mud contamination or cement hydration.

**Special Drilling Operations (Gas/Mist Drilling):**

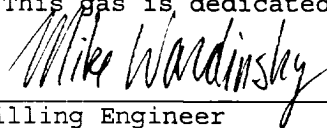
The following equipment will be operational while gas/mist drilling:

- An anchored blooie line will be utilized to discharge all cuttings and circulating medium to the blow pit a minimum of 100' from the wellhead.
- The blooie line will be equipped with an automatic igniter or pilot light.
- Compressors will be located a minimum of 100' from the wellhead in the opposite direction from the blooie line.
- Engines will have spark arresters or water cooled exhaust.
- Deduster equipment will be utilized.
- The rotating head will be properly lubricated and maintained.
- A float valve will be utilized above the bit.
- Mud circulating equipment, water, and mud materials will be sufficient to maintain control of the well.

**Additional Information:**

- The Dakota and Mesa Verde formations will be completed and commingled.
- No abnormal temperatures or hazards are anticipated.
- Anticipated pore pressures are as follows:

Fruitland Coal	300 psi
Pictured Cliffs	600 psi
Mesa Verde	700 psi
Dakota	2500 psi
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered.
- The south half of Section 11 is dedicated to the Mesaverde and the east half of Section 11 is dedicated to the Dakota in this well.
- This gas is dedicated.

  
Drilling Engineer

3/12/01  
Date