

DRILLING PLAN

STATE B.COM #1E
NW NW Section 16-29N-10W
San Juan County, New Mexico

1. SURFACE GEOLOGICAL FORMATION: Tertiary Huerfano

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS:

Ojo Alamo	1005'	Upper Mancos	4821'
Kirtland	1014'	Gallup	5640'
Fruitland	1812'	Lower Mancos	6184'
Pictured Cliffs	2103'	Greenhorn	6393'
Lewis	2294'	Graneros	6452'
Chacra	3111'	Dakota A	6513'
Cliff House	3706'	Dakota B	6568'
Menefee	3986'	Morrison	6773'
Point Lookout	4383'		

3. ESTIMATED TOPS OF POSSIBLE WATER, OIL, GAS OR MINERALS:

Ojo Alamo	1005'	Water
Fruitland	1812'	Gas
Pictured Cliffs	2103'	Gas
Cliff House	3706'	Gas
Gallup	5640'	Gas
Dakota	6513'-6568'	Oil & Gas

4. PROPOSED CASING PROGRAM:

<u>Casing</u>	<u>Hole Size</u>	<u>Interval</u>	<u>Section Length</u>	<u>Size OD</u>	<u>Weight Grade and Joint</u>	<u>New Used</u>
Conductor	---	---	---	---	---	---
Surface	12-1/4"	0-400'		8-5/8"	24#,K-55,STC	New
Intermediate	---	---	---	---	---	---
Production	7-7/8"	0-6785'		4-1/2"	10.5#,K-55,STC	New
Liner	---	---	---	---	---	---

Cement Program

Conductor	---
Surface	Circulate cement to surface with 2% CaCl ₂ additive
Intermediate	---
Production	Volume of cement will depend on caliphared hole volume. Neat cement will be placed about 1000' above lower producing formations. Estimated 175 sx 50/50 poz mix with 4% gel and friction reducer followed by 160 sx Class "G" cement. Set DV tool 100' below Ojo Alamo and cement into surface casing.
Liner	---

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5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL: A schematic design of the blow out preventor is attached. This equipment will be 5000 psi working pressure. The BOP's will be hydraulically tested to API specifications after nipping up and after any use under pressure. Pipe rams will be operationally checked each 24 hour period as will blind rams and annular preventer each time pipe is pulled out of hole. Such checks of BOP will be noted on daily drilling reports.

6. TYPE AND CHARACTERISTIC OF PROPOSED DRILLING FLUIDS:

<u>Depth</u>	<u>Type</u>	<u>Weight #/gal</u>	<u>Visc sec/qt</u>	<u>Fluid loss cc</u>
0 - 400'	Gel and lime - spud mud			
400' - 3100'	Benex clean water system - use lime if required to flocculate native solids			
3100' - T.D.	Low solids, 9.1#/gal non-dispersal mud, vis 35-40 sec			

7. AUXILIARY EQUIPMENT:

A kelly cock will be kept in the string

A float will not be used at the bit

A stabbing valve will be on the floor to be stabbed into the drill pipe when kelly is not in the string

8. TESTING, LOGGING AND CORING PROGRAMS:

At this time no drill stem tests or cores are planned. However, hole conditions and information obtained while drilling may alter these plans.

The logging program will consist of DIL-IES & CNL-FDC in the open hole. CBL w/var density & GR-correlation w/collar locator in the cased hole.

9. ANTICIPATED ABNORMAL TEMPERATURES, PRESSURES OR HAZARDS: There are no abnormal pressures, temperatures or potential hazards in the area. The maximum anticipated pressure is 2750 psi. Weight material will be maintained on location at all times.

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10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS: Dirtwork and road work for this location will require 2 or 3 days. Moving in and rigging up 2 to 3 days. Drilling and completion will require approximately 30 days, for a total of 36 days. In the event of bad weather or other delays, this time could be considerably extended.

It is anticipated operations on this well could be commenced on September 5, 1981. Depending upon rig availability, equipment, weather, etc., this starting date could be extended.

