

## DRILLING PROGRAM

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Arch Petroleum Inc.  
Sections 21 and 22, T23S, R37E  
Lea Co., New Mexico

1. Geologic Name of Surface Formation: Quaternary

2. Estimated Tops of Geologic Markers:

Rustler 1,030'	Queen 3,260'	Glorieta 4,960'
Top Salt 1,150'	Penrose 3,350'	T/Blinebry 5,220'
Base Salt 2,350'	Grayburg 3,525'	B/Blinebry 5,850'
Yates 2,490'	San Andres 3,780'	Tubb 5,950'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas:

Fresh Water 300'-500'  
Glorieta 4,960'-5,220'  
Blinebry 5,220'-5,850'

4. Casing Program:

<u>Casing</u>	<u>Hole Size</u>	<u>Weight</u>	<u>Grade</u>	<u>Setting Depth</u>
Surface	8 5/8"	24#	K-55	1,150'
Production	5 1/2"	15.5#	J-55	6,000'

### Cement Program:

- (a) Surface casing will be 8-5/8" set at 1150' and cemented with 675 sacks of Class 'C' with 2% CaCl<sub>2</sub>.
- (b) Production casing will be 5-1/2" set at approximately 6,000' and cemented in two stages with a DV tool at 3,200'. First stage will be Class 'C' with 16% gel, 2% salt, and 0.2% CLS followed by Class 'C' with 0.5% CFR-2. Second stage will be Class 'C' with 16% gel followed by Class 'C' neat. Volumes to be determined by caliper log to circulate cement to surface.

5. Pressure Control Equipment:

The minimum specifications for pressure control equipment can be seen on the attached Exhibit 1 for a blowout preventer hook-up for 3,000 psi working pressure.

6. Proposed Mud System:

0-1150' fresh water spud mud

1150'-5000' saturated salt water

5000'-6000' salt water polymer with the following properties: Viscosity 30 sec., water loss 10 cc or less, weight 10 ppg with 5% KCl. Heavier weight mud will be used if required by well condition. 10 ppg brine is only used to minimize salt washout and formation damage and not for well control. No significant well control problems are anticipated.

7. Logging, Testing, and Coring Program:

(a) Formation testing may be done at any depth where samples, drilling rate, or log information indicates a possible show of oil or gas.

(b) Open hole logs will be run at total depth

(c) Plans are to conventionally core one of these wells in the Blinbry.

8. Abnormal Conditions, Pressures, Temperatures, and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated Bottom Hole Temperature (BHT) at TD is 115°F and estimated maximum Bottom Hole Pressure (BHP) is 3000 psig. Hydrogen sulfide is not considered to be a significant safety hazard since well control should not be a problem. In anticipation of encountering H<sub>2</sub>S gas, Exhibit 2 is the Plan of Operation for H<sub>2</sub>S Drilling. No major loss circulation zones have been reported in offsetting wells.

9. Anticipated Starting Date:

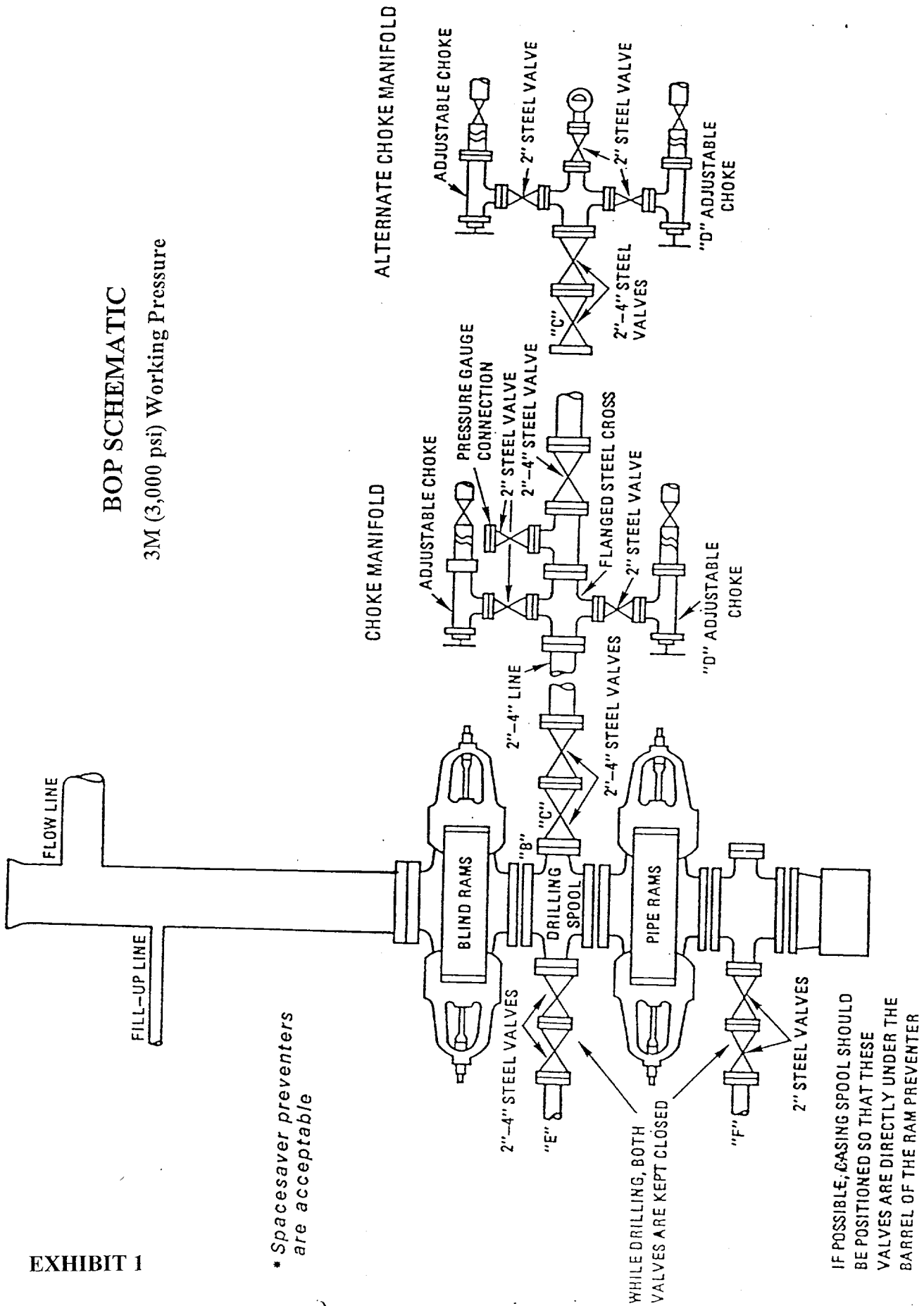
Road and location work will not begin until approval has been received from the BLM. Anticipated spud date should be October, 1995.

10. Other Facets of the Proposed Operation:      None.

## BOP SCHEMATIC

3M (3,000 psi) Working Pressure

\* Spacesaver preventers are acceptable



IF POSSIBLE, CASING SPOOL SHOULD BE POSITIONED SO THAT THESE VALVES ARE DIRECTLY UNDER THE BARREL OF THE RAM PREVENTER

12/8/95

