

5 1/2" Production Casing Set at TD

Centralize every joint from TD to 600'. Cement with 485 sx Class C Neat with 2% gel, 5% salt, 1/4# FC (14.2 ppg, 1.34 ft3/sx).

5. Minimum Specifications for Pressure Control:

7 7/8" Hole - The following BOP equipment will be nipped up on the 8 5/8" casing and used continuously until TD is reached for the 7 7/8" hole.

The blowout preventer equipment (BOP) shown in Exhibit "E" will consist of a 3000 psi WP double ram type preventer and a 3M annular (bag type) preventer with rotating head. Both BOP's will be hydraulically operated. At the drilling contractor's option, 5M BOP's may be substituted. H₂S trim will not be required.

Before drilling out from under the 8 5/8" intermediate casing, all BOP's and accessory equipment will be tested to 1000 psi with the rig pump. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

BLM method to calculate minimum BOP requirements:

$$(.052)(8.4 \text{ ppg})(4000') - (0.22 \text{ psi/ft})(4000') = 867 \text{ psi}$$

Minimum BOP requirements: 2M BOP stack and manifold system

6. Proposed Mud System:

The well will be drilled to TD with a combination of fresh water and 10# brine. The applicable depths and properties of this system are as follows:

<u>Depth</u>	<u>Type</u>	<u>Weight (ppg)</u>	<u>Viscosity (sec)</u>	<u>Water Loss cc</u>
0-600'	Fresh water	8.4	28	NC
600-4000'	Brine	10.0	29	NC

Sufficient mud materials to maintain mud properties and meet minimum lost circulation requirements will be kept at the well site at all times.

7. Auxiliary Well Control and Monitoring Equipment:

- A kelly cock will be kept in the string at all times.
- A full opening drill pipe stabbing valve (TIW/inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- An electronic pit volume totalizer system will NOT be used. The drilling fluids system will be visually monitored at all time.

100