

5-1/2" Production Casing: Cement w/ 700 sx Super "H" Modified + 0.4% CFR-3 + 0.4% Halad-344 + 0.1% HR-7 (13.0 ppg, 1.65 ft<sup>3</sup>/sx).

5. Pressure Control Equipment:

The blowout preventer equipment (BOPE) shown in Exhibit D will be utilized for the 11" and 7-7/8" hole sections. The assembly will consist of a 5000 psi WP double ram-type preventer (4-1/2" pipe and blind rams) and a 3000 psi WP annular preventer (API RP53 Fig 2.c.5). This BOPE assembly will be nipped up on the surface casing and used continuously until setting the 5-1/2" casing at total depth of  $\pm 13,700'$ . All BOPE will be tested as follows:

- Prior to drilling out from surface casing – test all BOPE to 500 psi using rig pump.
- Prior to drilling out from 8-5/8" casing – test ram-type preventers and choke manifold to 5000 psi and annular preventer to 70% of rated WP using independent tester and test plug.

A rotating head will be installed on top of the annular preventer after setting the 8-5/8" casing at  $\pm 4000'$ .

All BOP's will be hydraulically operated. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of hole. The kill line will be 2" minimum and will include a remote connection. The choke line will be 3" minimum. A complete choke manifold schematics is shown in Exhibit E.

6. Proposed Mud System:

The proposed mud system will be a combination of fresh water, brine, cut brine, and polymer gel. The depth and mud properties of the mud system are listed below.

Depth	Type	Weight (ppg)	Viscosity (sec)	Waterloss (cc)	ph
0-425'	Fresh Water	8.3-8.8	28-30	Not Critical	9-10
425'-4000'	Brine Water	8.8-10.2	28-30	Not Critical	9-10
4000-12,900'	FW/Cut Brine	8.5-9.0	28-30	Not Critical	9-10
12900-13,700'	Polymer/Gel	9.0-9.8	30-32	<10	9-0