cemented. Upper and lower Kelly cocks with valve handle and subs to fit all drill string connections which are in use will be available on the rig floor.

Tests will be run when:

1) installed
2) anytime a pressure seal is broken (test only affected equipment)
3) at least every 30 days
4) blind & pipe rams will be activated each trip, but no more than daily

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and tested before drilling surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated daily to ensure good mechanical working order and this inspection recorded on the daily drilling report. Preventers and casing will be pressure tested before drilling casing cement plugs. Maximum expected bottom hole pressure is ≈2,650 psi. BOP and mud system will control pressure.

4. CASING & CEMENT

Hole Size	O.D.	Weight (lb/ft)	Grade	Age	Connections	GL Setting Depth
12-1/4"	8-5/8"	24	J-55	New	ST&C	1,100'
7-7/8"	4-1/2"	11.6	J-55	New	LT&C	6,360'

Surface casing will be cemented to surface with ≈717 cubic feet (≈350 sacks) Class C "Lite" + 2% $CaCl_2$ mixed at 2.05 cubic feet per sack and ≈262 cubic feet (≈200 sacks) Class C + 2% $CaCl_2$ mixed at 1.32 cubic feet per sack. Total volume of 979 cubic feet = 115% excess. Seven centralizers will be used (one on the shoe joint and every 160' to surface).

Production casing will be cemented to 5,100' with ≈323 cubic feet (≈250 sacks) Class C 50/50 Poz mixed at 1.29 cubic feet per sack. Sixteen centralizers will be used (one on the shoe joint and every 80' to 5,100'). Excess = 12%.