4. The Proposed Casing Program:

Casing Design

CASING STRING	HOLE SIZE	INTERVAL	SECTION LENGTH	SIZE (OD)	WEIGHT, GRADE AND JOINT	NEW OR USED	MUD WEIGHT	TENSION LOAD	SF_t	SF_c	SF_b
Conductor	22"	0' - 40'	40'	18"	Open	New					
Surface	12-1/4"	0' - 530'	530'	9-5/8"	36# K-55	New	13.5	19,080#	22.2	5.4	3.0
Production	8-3/4"	0' - 1,850'	1,850'	7"	20# K-55	New	13.5	37,000#	6.9	1.7	2.0
	6-1/4"	0' - 1,400'	1,400'	4-1/2"	11.6# K-55	New	9.0	67,690#	2.5	6.1	1.3
		1,400' - 6,300	4,900'	4-1/2"	10.5# K-55	New	9.0	51,450#	2.8	1.4	1.3

Cement Program:

Surface — 280 sx of Class "B" w/2% $CaCl_2$. Cement top at surface using 100% excess. Centralizers: 3 WOC: 12 hours.

Intermediate — 100 sx of Light cement (Halliburton "Light" or equivalent) w/2% $CaCl_2$; followed by 100 sx of Class "B" w/2% $CaCl_2$. Cement top 50' inside surface casing using 20% excess. Centralizers: 10 WOC: 12 hours.

Production — 1st Stage: 105 sx 50-50 Poz-mix w/6% gel, .8% fluid loss reducer (Halliburton Halad-9 or equivalent) followed by 100 sx neat Class "B". Use 20% excess.
2nd Stage: 180 sx Light cement (Halliburton Light or equivalent) with 2#/sack ground walnut shells (Halliburton Tuf-Plug or equivalent) and .8% fluid loss reducer (Halliburton Halad-9 or equivalent). Sufficient quantity of 2% KCL water will be pumped ahead of slurry to reach surface. Cement top 50' inside intermediate casing. Centralizers: 10. WOC: 12 hours.