Casing Design:

O.D.	Weight	Grade	Thread	Coupling	Interval	Length
8 5/8"	32#	J-55	8R	ST & C	0 - 4200'	4200'

Minimum Casing Design Factors: Collapse 1.125, Burst 1.0, Tensile Strength 1.8

Cement Program: Lead Slurry: 1000 sacks "Lite C" with 10# salt, 1/4# Cellocel
Slurry Properties: Weight: 12.7 ppg Yield 1.98 cu.ft./sack

Tail Slurry 250 sacks "Class C" with 2% Caclz
Calculated Linear Fill: Circulate to surface.
Slurry Properties: Weight: 14.8 ppg Yield 1.32 cu.ft/sack

Hole Size: 7 7/8" Total Depth: 7900' Casing Size: 5 1/2"
Setting Depth: 8500' Mud Weight: 8.7 ppg

Casing Design:

O.D.	Weight	Grade	Thread	Coupling	Interval	Length
5 1/2"	17#	J-55	8R	LT & C	0 - 500'	500'
5 1/2"	15.50#	J-55	8R	LT & C	500' - 7550'	7050'
5 1/2"	17#	J-55	8R	LT & C	7550' - 8200'	650'

Minimum Casing Design Factors: Collapse 1.125, Burst 1.0, Tensile Strength 1.8

Cement Program: First Stage: 175 sacks "Class H" + 8# sack CSE + 0.6% CF-14 + 5# sack Gilsonite + 0.35% Thiftylite DV Tool set at approximately 7100'.
Cement calculated to 7100'.
Slurry Properties Weight: 13.6 ppg Yield: 1.32 cu.ft/sack

2nd Stage: 425 sacks "Class C" with 10# sack CSE, 1/4# sack cellocel. Weight: 11.5 ppg, Yield 2.25 cu.ft/sack + 300 sacks- "H", 8# sack CSE, 0.5% CF-14 + 0.35% Thriftylite.
Calculated to tie back to intermediate casing.
Slurry Properties: Weight: 13.3 ppg Yield: 1.82 cu.ft/sack

5. Mud Program and Auxiliary Equipment:

From 0 to 500' (Minimum Properties)
Mud Weight: 9.1 ppg, Viscosity: 32 sec./1000 cc, Water Loss: N/C cc, Mud Type: FW Gel/LCM
Mud will be checked tourly by rig personnel. Sufficient quantities of mud will be kept on location to maintain minimum properties.

From 500' to 4200' (Minimim Properties)
Mud Weight: 10.0 ppg, Viscosity: 28 sec./1000cc, Water Loss: N/C cc, Mud Type: Brine, use salt water gel for hole sweeps.
Mud will be checked tourly by rig personnel. Sufficient quantities of mud will be kept on location to maintain minimum properties

From 4200' to 6500' (Minimum Properties)
Mud Weight: 8.7 ppg, Viscosity: 28 sec.1000cc, Water Loss: N/C cc, Mud Type: Cut Brine.
Mud will be checked tourly by rig personnel. Sufficient quantities of mud will be kept on location to maintain minimum properties.

From 6500' to 8200' (Minimum Properties)
Mud weight: 8.7 - 8.9 ppg, viscosity 28 sec./1000cc, Wate Loss: 15 cc, Mud Type: Starch, cut Brine.
Mud will be checked tourly by rig personnel. Sufficient quantities of mud will be kep on location to maintain minimum properties.