

Application to Drill
John H. Hendrix
Penrose Federal #5

9. Cementing and Setting Depth:

13 3/8" Conductor	Set @ 40' cement with readymix to surface.
8 5/8" Surface Casing	Set @ 1160' cement with 225 sx Class "C" 2% Gel 2% CaCl + 200 sx Class "C" 2% CaCl. Circulate to surface.
5 1/2" Production Casing	Set @ TD 6200' cement with 450 sx 50/50 Poz + 200 sx Class "C" 4% Gel. Tie back into 8 5/8 @ 1160'.

10. Pressure Control Equipment: Exhibit "E". A Blow-out Preventer (no less than 900 series 3000 psi working pressure) consisting of double ram type preventer with bag type preventer. Units will be hydraulically operated. Exhibit "E-1" Choke Manifold and Closing Unit. Blind rams on top, pipe rams on bottom to correspond with size of drill pipe in use. BOP will be nipped up on 8 5/8" casing and remain on well until casing is run and cemented. BOP will be tested as well as choke manifold. BOP will be worked at least once each day while drilling and blind ram will be worked on trips when no drill pipe is in hole. Flow sensor PVT, full opening stabbing valve and upper kelley cock will be utilized. No pressures greater than 2000 psi anticipated.

11. Proposed Mud Circulating System:

Depth	Mud Wt.	Mud Visc.	Fluid Loss	Type Mud
0-1160	8.6 - 9.0	34-36	NC	Fresh Water
1160-6200	10.0 - 10.1	28-29	NC	Brine water w/lime for pH control and paper for seepage

In order to run casing viscosity may have to be raised and water loss may be required to be lowered to 8cc or less depending on hole conditions.