

Drilling, Casing and Cementing (Cont'd):

10. Run 4½" casing as follows:

470-2 0 - 3300' - 11.6 N-80, LTRC
 3300 - 8000' - 11.6 J-55, STAC
 8000 - 11500' - 11.6 N-80, LTRC

5½" casing may be run as follows:

 0 - 1800' - 17#, N-80, LTRC
 1800 - 2800' - 17#, J-55, LTRC
 2800 - 5800' - 15.5#, J-55, LTRC
 5800 - 7600' - 17#, J-55, LTRC
 7600 - 11500' - 17#, N-80, LTRC

Casing will be run with float shoe, differential fill-up collar and sufficient reciprocating scratchers and centralizers to cover productive interval.

11. Cement w/sufficient 50-50 Pozmix "S" cement w/0.4% HR-4 to cover all zones of interest. 2 sx of lime in 10 bbls water ahead of cement. Add 2 sx sodium bichromate to mud system prior to running casing. Tail in with Latex to cover 150 feet above pay zones. Approximately 60 sx required.
12. If floatshold, land casing as cemented, WOC 8 hrs., run temperature survey. (Well may be completed with rig over hole.)

DRILLING FLUIDS PROGRAM:

1. Surface Hole - 0 to 650'. Spud mud. Add gel and lime as needed to clear hole. Use fiber for loss of circulation as needed.
2. Intermediate Hole - 650' to 3225'. Saturated brine water. Add water to maintain minimum viscosity necessary. Pretreat system w/fiber (6 to 8#/bbl) at 3000'. If hole gives trouble, lower water loss to 20 cc to run casing.

NOTE: If severe loss of circulation is encountered below 3000', hole will be "air drilled" to intermediate point or air equipment may be installed. Drilling should not be stopped to combat loss of circulation.

3. Below intermediate:

3225 to 11,000': Clear water treated with surfactant, some treatment w/paper may be required to reduce losses. Add lime to keep pH above 1.

11,000' to TD: Use low solids, GMD system with the following properties:

Weight 9.5 to 9.8
Viscosity 38-42
Water Loss 20-25

Add chemicals and barite as required to maintain good hole conditions to total depth.