

12. Mud Program

0' - 50'	Drill with rat hole machine.
50' - 2500'	Fresh water. If loss of circulation is encountered in this section of the hole, dry drill ahead to casing point using periodic viscous sweeps to clean hole.
2500' - 6500'	Fresh water with detergent using paper for seepage and lime for pH control.
6500' - 9000'	Brine water with caustic for pH control, 9.8# - 10.0#/gallon.
9000' - 10160'	Brine water with Drispac, 10.0# - 10.6#/gallon, 32-34 vis, 10-12 cc water loss, pH 9-11.

Mud system monitoring equipment with derrick floor indicators and visual and audio alarms shall be installed and operative before drilling into the Wolfcamp formation and used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- A. A recording pit level indicator to determine pit volume gains and losses.
- B. A pit volume totalizer for accurately determining mud volumes necessary to fill the hole on trips.
- C. A flow line sensor on the flow line to warn of any abnormal mud returns from the well.

13. Testing, Logging and Coring Program

- A. Testing Program. Cisco (1), Strawn (1), Morrow (1)
- B. Mud Logging Program. Two-man unit 4000' - TD 10160'.
- C. Electric Logging Program.
  - 1. BHC-Sonic-GR
  - 2. BNL-FDC-GR-CAL
  - 3. DIL-RXO-HDT

All Schlumberger logs.

- D. Coring Program. Two cores in Upper Cisco.