

DRILLING PROGNOSIS & MUD PROGRAM

OPERATOR: Texas International Petroleum Corporation

LEASE AND WELL NO: Lowe-Federal #1 (Morrow)

LOCATION: 1980' FNL & 760' FEL of Section 31, T20S & R30E, Eddy County,
New Mexico

SURFACE CASING: 26" surface hole is to be drilled to an approximate depth of 450' using a fresh water gel-lime spud mud. A caliper survey will be run to determine volume of cement required. 20" OD casing will be set at approximately 450'.

SALT PROTECTION CASING: 17-1/2" hole is to be drilled below the surface casing using saturated salt water, 13-3/8" OD casing is to be set not less than 100' nor more than 600' below the base of the salt. Anticipated setting depth is approximately 1600'. Cement will be brought back to surface.

INTERMEDIATE CASING: 11" hole is to be drilled below the salt protection casing to approximately 4000' using fresh water. Lost circulation is anticipated while drilling through the Capitan Reef. The hole will of necessity be dry-drilled to casing point, if lost circulation is severe. Cementing of the 8-5/8" casing back to surface will be accomplished through stage cementing procedures.

PRODUCTION CASING: 7-7/8" hole is to be drilled from below the 8-5/8" to total depth using fresh water with flo-sal and 2-4% potassium chloride. Before drilling the Strawn zone, brine will be used and subsequently retained through the Morrow interval. Cementing of the 5-1/2" oil string will be accomplished after evaluating open hole logs and caliper.

MUD PROGRAM SUMMARY:

Surface: Fresh water gel-lime spud mud

Salt Protection: Saturated salt water

Intermediate: Fresh water with required lost circulation materials

Oil String: Fresh water, 2% KC₁ with Flo-Sal, followed by brine of sufficient weight to control encountered hole conditions. The following products will be used with the above program: bentonite, lime, potassium chloride, caustic soda, starch, salt gel, formaldehyde, barite (possibly), asbestos and inert lost circulation materials.