

Date July 31, 1989

Company Bettis Brothers Location Sec 15, T16S, R28E

Well Name Eddy County Prospect County Eddy State NM

**CASING PROGRAM**

13 3/8" @ 400'

8 5/8" @ 2,000'

TD @ 9,600'

**RECOMMENDED DRILLING FLUIDS PROPERTIES**

Depth	Mud Weight	Viscosity	API Filtrate	pH		
0-400'	8.4-9.0	32-38	NC	10.0		
<p>Drill with Milgel (15-20 lb.bbl), Mil-Lime (1-2 lb.bbl) spud mud, circulating steel pits. Add Cottonseed Hulls and Mil-Fiber for lost circulation. If returns cannot be regained, dry-drill to casing point and spot a viscous pill to ensure proper pipe placement.</p>						
400'-2000'	8.5-10.5	32-34	NC	9.0-10.0		
<p>Drill out with Fresh Water, circulating the reserve pits and mixing Lime for pH maintenance. Utilize native solids to achieve a 32-34 sec/1000 cc funnel viscosity, add water at the flowline as needed to control viscosity in this range. Begin additions of 10.0 lb./gal Brine prior to drilling the anhydrite and salt sections to minimize washouts. Sweep hole with viscous Salt Water Gel or Dyna Sweep pills prior to running pipe. Add Paper-Ox to control seepage; greater losses will usually require Gel/LCM pills.</p> <p>For lost circulation, mix a viscous pill consisting of Salt Water Gel (10-20 lb./bbl) and Kwik Seal (10-20 lb./bbl) pump as a sweep at a reduced pump rate to regain returns.</p>						
<p>EXHIBIT "F" BETTIS BOYLE &amp; STOVALL CROW FLATS FED COM "15" NO. 1 2180' FNL &amp; 660' FEL SEC. 21, T16S, R28E Mud Program</p>						