RECOMMENDED DRILLING & COMPLETION PROCEDURE

A.F.E. NO. 462

David Fasken ---------- EL PASO FEDERAL NO. 6 ---- Avalon (Morrow) Field
Eddy County, New Mexico

1. Drill 17-1/2" hole to 400' with spud mud.

2. Set 13-3/8" casing at 400', cement to surface and install 12" x 3000 psi W.P. casinghead and B.O.P. stack. (Estimate 350 sxs Halliburton Lite w/1/2# Flocele per sack and 2% CaCl, slurry weight 12.7 ppg, yield 1.85 cf/sx, plus 100 sxs Class "C" with 2% CaCl.)

3. Drill 12-1/4" hole to 3000' with fresh water, control seepage with paper. Dry drill if complete loss of returns is encountered.

4. Set and cement 8-5/8" casing at 3000' with sufficient cement to circulate (Estimate 900 sxs Halliburton Lite with 1/2# Flocele per sack plus 2% CaCl, slurry weight 12.7 ppg, yield 1.85 cf/sx, plus 200 sxs Class "C" with 2% CaCl, slurry weight 14.8 ppg.) W.O.C. 18 hours. If cement does not circulate, run temperature survey and stage cement outside pumped through 1" tubing using Class "C" with 4% CaCl and/or fill up with ready mix concrete - 6 sxs mix with pea gravel aggregate. Install 12" - 3000# W.P. x 10" - 5000# W.P. spool with secondary seal, bit guide, B.O.P.'s, Hydril and choke manifold.

5. On or before 8000' test 8-5/8" casing to 2200 psig and test B.O.P.'s, choke manifold and all wellhead valves to 3000 psig and Hydril to 1500 psig.

6. Install PVT, flow line sensor, and rotating head at 8000'.

7. Drill 7-7/8" hole to estimated T.D. of 11,400' with fresh water. Control seepage with paper and P_h at 11.0 with lime.

8. At 8000' add potash to 4% KCl concentration, increase viscosity with salt water gel as required to maintain good hole conditions. Decrease water loss as necessary with salt water C.M.C. and starch. At top of Morrow reduce water loss to 10 cc and maintain to T.D.

9. Drill stem test all shows (test each Morrow Sand separately).

10. Run logs (combination CNL-FDC w/Gamma Ray, DLL and Dip Meter).

11. Set and cement 4-1/2" production casing (resin coated and centralized through pay zones) in two stages with D.V. tool at 7000'.

    First Stage: 500 sxs Class "H" cement with 3.0# KCl per sx, 1/4# Flocele and 0.8% Halad-22 plus 0.4% CFR-2, slurry weight 15.6 ppg, yield 1.19 cf/sx, plus 500 sxs Class "H" with 3.0# KCl plus 0.8% Halad-22 plus 0.4% CFR-2, slurry weight 15.6 ppg, yield 1.18 cf/sx. Open D.V. tool and circulate 6 hours.

    Second Stage: 1400 sxs Class "C" - 50-50 Pozmix with 2% Gel, slurry weight 13.7 ppg, yield 1.36 cf/sx.

12. Install 10" - 5000 psi W.P. x 6" - 5000 psi W.P. tubinghead and Christmas Tree.

13. Run temperature survey to locate cement top.

14. Rig down and move out rotary tools.