

DRILLING PROGRAM
 REED "A-3" FEDERAL #16
 Page Three

B. CEMENTING PROGRAM

Surface Casing: 11-3/4" @ ^{350'}~~300'~~ ± class C, 2% CaCl₂, 14-3/4" x 11-3/4"
 (0.4336 cu. ft/ft) (300') (100% excess) = 340 sx

Intermediate Casing: 8-5/8" @ 4600' ± Class "C" + 2% CaCl₂, 11" x 8-5/8"
 (0.2542 cu ft/ft) (4600) (50% excess)

Lead = 450 sxs Class "C" + 2% CaCl₂
 Tail = 300 sxs Class "C" + Gas Block

PRODUCTION CASING: 5-1/2" @ 8100' ± "C" and "H", 2% CaCl₂, 7-7/8" x 5-1/2"
 (.1579 cu. ft/ft) (8100') (30% Excess over caliper log)

Lead = 126 sxs Class "C" + 4% Gel + 2% CaCl₂
 Tail = 310 sxs Class "H"

7-7/8" x 5-1/2" (0.1733 cu ft/ft) 2100) (30% excess) = 436 sxs

5. Type and characteristics of the proposed circulating mud:

A. Mud Characteristics

| Depth | Mud Wt. | Vis | Ph | Weighting API STD | Material |
|--|-----------|-------|------|----------------------|----------|
| ^{350'} 0' - 300' | 8.5-8.8 | 45 | 8-10 | NC | FW Gel |
| ^{350'} 300' - 4600' | 10.0-10.2 | 40-45 | 8-10 | 5-10 | Sw Gel |
| 4600' - 8100' | 8.4-8.6 | 28.37 | 8-10 | NC | FW Gel |

B. Mud Types

Fresh water gel mud will be used from surface to ^{350'}~~300'~~.
 Brine water gel mud will be used from ^{350'}~~300'~~ - 4600'.
 Fresh water gel mud will be used from 4600-8100'.

6. Testing, Logging and Coring programs to be followed:

- A. DST: None anticipated
- B. Cores: None anticipated
- C. Electric Logs: Dite/BHC/NGT/CAL, CNL/LDT/ML/CAL/PEF, FMI

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