

JUNE 24, 1993
APPLICATION FOR PERMIT TO DRILL
STEVENS & TULL, INC.
FEDERAL "9" NO. 5

330' from the north line. 990' from the east line. Section 9, T-20-S, R-33-E, Lea County, New Mexico.

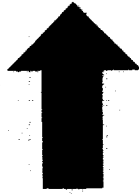
The following items and attachments compliment Stevens & Tull, Inc.'s permit to drill the Federal "9" No. 5.

- 1) The geologic surface formation is of Quaternary Age.
- 2) Estimated tops of geologic markers are as follows: The anhydrite 1325', salt 3050', Yates 3250'.
- 3) The estimated depths at which water is expected are between 150' and 350'. The estimated depths which oil or gas is expected is between 3200' and 3600' in the Yates dolomite and sand formations. Fresh water zones will be protected with independent casing and cement.
- 4) Red beds and fresh water will be protected with 8 5/8" 24# and 32# J-55 ST&C casing run to a good shoe setting at approximately 1300' with 13 centralizers and cement to surface. Anhydrite, salt and oil sands will be protected with 5 1/2" 17# J-55 LT&C casing run to a total depth of the well and cemented back to surface.
- 5) Pressure control, see the attached sketch.
- 6) Mud program, see the Horizon Mud Company recommendation attached.
- 7) There is no planned auxiliary equipment.
- 8) Open hole logs will be run from total depth to surface. No cores or DTS's are planned.
- 9) No abnormal temperatures or pressures are expected. No lost circulation is expected.
- 10) The anticipated starting date is September 1, 1993.

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Job separation sheet

DRILLING, CASING AND CEMENTING PROGRAM

- 1) Drill 12 1/4" hole to approximately 1300' or to firm formation with fresh mud, with a viscosity of 30 seconds per quart and a water loss less than 10 cc per 30 seconds. Maintain pump pressure less than 800 psi to prevent excessive hole enlargement.
- 2) Circulate hole clean with 2 hole volumes of mud.
- 3) Run 8 5/8" casing with a centralizer on the first collar and one on each third collar from the bottom. Use a Texas patterned guide shoe with an aluminum baffle float. Land the casing with the collar eighteen inches below the surface.
- 4) Cement the casing in place with 540 sacks Class "C" + 4% gel + 2% Calcium Chloride and 1/4# per sack cellophane, plus 150 sacks class "C" with 2% Calcium Chloride and 1/4# per sack cellophane. Displace the cement to the float. Shut in.
- 5) Wait on cement 24 hours before drilling out (12 hours with pressure on pipe). Test pressure control equipment to 1000 psi for 30 minutes before drilling through the casing shoe.
- 6) Drill 7 7/8" hole with brine at native conditions to a depth of 2700'.
- 7) At 2700' depth raise the mud viscosity to 37 seconds per quart and reduce water loss to less than 10 cc per 30 seconds.
- 8) Drill to TD of 3500'.
- 9) Circulate hole for 4 hours with mud at designed conditions.
- 10) Pull out of the hole, lay down drill string.
- 11) Run 5 1/2" casing with guide shoe, float collar, latchdown wiper plug baffle and 15 centralizers, one on each collar from the first collar up.
- 12) Cement with 300 sacks Pacesetter Lite "C" cement + 5% salt, with 1/4# cellophane plus 290 sacks POZ 50/50 class "C" with 5/10% CF-2 and 5% salt plus 1/4# per sack cellophane. Displace plug with fresh water, release pressure and leave shut in.

NOTE: Rotate 5 1/2" casing during cementing.

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