

Application for Permit to Drill Government "AG" No. 1

March 11, 1980

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7. Estimated tops of important geologic markers:

Bone Springs	4858'
Wolfcamp	8544'
Canyon	9526'
Strawn	9967'
Atoka	10,492'
Morrow	10,611'
"B" Zone	10,815'
"A" Zone	11,033'
Chester	11,189'
Projected TD	11,240'

8. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

A. Primary objective Morrow "B" Zone	10,815'
B. Secondary objectives Morrow "A" Zone	11,033'
Canyon	9526'
Wolfcamp	8544'

9. The proposed casing program is as follows:

Surface:	13-3/8" OD 48# H40 ST&C new casing
Intermediate:	8-5/8" OD 24# & 32# K55 ST&C new casing
Production:	5-1/2" OD 17# & 20# N80 LT&C new casing

10. Casing setting depth and cementing program:

- A. 13-3/8" OD surface set at 600'. Circulate cement with 600 sacks Class "C" with 2% CaCl.
- B. 8-5/8" OD intermediate set at 3000'. Circulate cement with 250 sacks Halco Thix-Set with 10# Gilsonite, 1/2# Flocele/sack and 2% CaCl followed by 1100 sacks Halco Lite with 5# Gilsonite and 1/4# Flocele/sack followed by 300 sacks Class "C" with 2% CaCl. If cement does not circulate, determine top of cement by temperature survey then finish cementing to the surface through 1" in the annulus using Class "C" with 2-4% CaCl.
- C. 5-1/2" OD production string set at 11,240'. Cement with 700 sacks Class "H" with 0.6% CFR-2 and 5# KCL/sack. Anticipated top of cement 8250'.