

Application for Permit to Drill Little Box Canyon Unit No. 3

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May 16, 1977

- 30-1800' Spud mud. Gel flocculated with Lime. Treat with coarse fibrous LCM. If severe loss occurs, dry drill ahead to casing point. Set 8-5/8" surface casing at 1800'.
- 1800-4700' Drill out with fresh water and circulate reserve pit.
- 4700-6300' To the existing water, add 10#/barrel KCL to stabilize the Shale through this section. Maintain KCL content at 40,000 ppm.
- 6300-8310' Mud up at top of Canyon formation maintaining weight 8.8-9.0#/gallon, viscosity 31-32 seconds with water loss 10 cc or below. Use Flosal to increase viscosity and KCL to maintain weight. Set 5-1/2" production casing at 8310'; or P&A.

13. Testing, Logging and Coring Program.

- A. Two (2) drill stem tests Morrow and Strawn.
- B. Mud Logging Program - one man unit 6300'-TD.
- C. Electric Logging Program - Compensated Neutron-Formation Density, Dual Laterolog-Micro-SFL, Coriband.
- D. Coring Program - none.

14. No abnormal temperatures or H₂S gas is anticipated. Possibility of high pressure zones in Wolfcamp, Strawn and Atoka. Adequate flare lines will be installed off the mud/gas separator and testing equipment to insure that gas may be piped away a safe distance from the well where it may be ignited and burned.

In addition to the pressure control equipment described in Item No. 11, the following equipment will be installed and in operation before drilling into the Wolfcamp zone:

- A. A recording pit level indicator to determine pit volume gains and losses.
- B. A mud volume measuring device for accurately determining mud volume necessary to fill the hole on trips.
- C. A flow sensor on the flow line to warn of any abnormal mud returns from the well.