APPLICATION TO DRILL

PENWELL ENERGY INC, INC.
JD "33" FEDERAL # 1
660' FNL & 2080' FEL SEC. 33
T21S-R33E LEA CO. NM

9. Casing:

		Setting Depth & Cementing:
20"	Conductor	Set 40' of 20" conductor cement to surface with Redi-mix.
13 3/8"	Surface	Drill 17½" hole to 600'. Run and set 600' of 13 3/8" 54.5# J-55 ST&C casing. Cement with 600 Sx. Class "C" + 2% CaCl + ¼# Flocele/Sx. Circulate cement to surface.
9 5/8"	Intermediate	Drill 12¼" hole to 5280'. Run and set 5280' of 9 5/8" ~~47#~~ ~~N-80~~ LT&C casing. Cement with 1000 Sx. Halco Light +2% CaCl + ¼# Flocele/Sx., tail in with 200 Sx. Class "C" +1% CaCl + 5% salt. Circulate cement to surface.
8½"	Production	Drill 8½" hole to 12,200'. Run and set 12,200' ~~5½" 29# S-95~~ LT&C ~~& Buttress~~ casing. Cement with 540 Sx. 50/50 POZ + 2% Gel + 3% salt + .2% retarder. Cement top to be no less than 12,000' from surface. (TIE BACK TO 9 5/8" CSG.)

10. Pressure Control Equipment: Exhibits "E","E-1", "E-2", "E-3",show skematics of BOP equipment to be used. A series 1500 5000 PSI WP BOP consisting of double ram type and annular preventor will be nippled up on 13 3/8" casing. Change BOP to 10,000 PSI WP after 9 5/8" casing is run and cemented. Test BOP, casing, and choke manifold to API specs. BOP pipe ram should be worked once each 24 hours and blind rams to be worked when drill pipe is out of hole on trips. Flow sensor, PVT, full opening stabbing valve and upper kelley cock will be utilized. No abnormal pressure or temperature is expected. Estimated BHP 6500 PSI and 190° BHT.

11. Proposed Mud Circulating System:

DEPTH	MUD WEIGHT	MUD VISC.	FLUID LOSS	TYPE MUD
0-600'	8.6-9	32-34	NC	Fresh water Spud mud
600-5280'	9-9.4	28-30	NC	Brine water add paper as necessary to control seepage
5280-12000'	8.4-8.6	28-30	NC	Fresh water add paper to control seepage
12000-15200'	10-11.7	28-40	NC-6CC	Brine Polymer system add add barite as necessary to control pressure as needed.

Sufficient mud materials to maintain mud properties to meet lost circulation and weight increase requirements will be kept at wellsite at all times. In order to DST, log well and/or run casing the water loss may have to be lowered and the viscosity raised.