

## Application to Drill

Gruy Petroleum Management Co.  
Gulf Federal Com 3  
Unit Letter C Section 1  
T23S - R26E Eddy County, NM

### 9 Cementing & Setting Depth:

13 3/8"	Surface	Set <del>425</del> <sup>575'</sup> of 13 3/8" H-40 48# ST&C casing. Cement with 490 Sx. Of Class "C" cement + additives, circulate cement to surface.
8 5/8"	Intermediate	Set 3200' of 8 5/8" K-55 24# ST&C casing. Cement in two stages, first stage cement with 1000 Sx. Of Class POZ/C Cement + additives, second stage cement with 200 Sx. Of Class "C" + additives, circulate cement to surface.
5 1/2"	Production	Set 13500' of 5 1/2" NP-80 / S-95 17# ST&C casing. Cement in two stages, first stage cement with 1020 Sx. of Class POZ/C Cement + additives. Second stage cement with 600 Sx of Class "C" Estimated top of cement 2700'.

### 10 Pressure control Equipment:

Exhibit "E". A 13 3/8" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000 # annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 6000'. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. BOP unit will be hydraulically operated. BOP will be nipped up on the 8 5/8" casing and will be operated at least once a day while drilling and the blind rams will be operated when out of

### 11 Proposed Mud Circulating System:

Depth	Mud Wt	Viscosity	Fluid Loss	Type Mud
<del>0 - 450'</del> <sup>575'</sup>	8.7 - 9.2	32 - 34	May lose circ.	Fresh water spud mud add paper to control seepage and high viscosity sweeps to clean hole.
<del>450' - 3200'</del> <sup>575'</sup>	10 - 10.3	28 - 29	May lose circ	Brine water. Add paper as needed to control seepage and add lime to control pH (9-10). Use high viscosity sweeps to clean hole.
3200' - 8300'	1/8/1900	28 - 29	NC	Fresh water. Paper for seepage. Lime for pH (9 - 9.5)
8300' - 10000'	9.2 - 9.4	28 - 29	NC	Cut brine. Caustic for pH control.
10000' - 13500'	9.2 - 10.6	32 - 34	NC	XCD Polymer mud system.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs. Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until production casing is run and cemented.