

Gruy Petroleum Management Co.  
Forni No. 45  
Unit Letter J Section 15  
T22S - R27E Eddy County, NM

30 - 015 - 34455

1 Cementing & Setting Depth:

13 3/8" Surface

Set 400' of 13 3/8" H-40 48# ST&C casing. Cement with 475 Sx. Of Class "C" cement + additives, circulate cement to surface.

9 5/8" Intermediate

Set 2650' of 9 5/8" J-55 40# LT&C casing. Cement lead with 680 sx Class POZ/C Cement + additives and tail with 200 sx Class "C" + additives, circulate cement to surface.

5 1/2" Production

Set 12150' of 5 1/2" P-110 17# LT&C casing. Cement in two stages, first stage cement with 670 Sx. of Class POZ/C Cement + additives. Second stage cement with 950 Sx of Class "C". Estimated top of cement 2700'.

2 Pressure control Equipment:

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 9 5/8" casing and will be operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling.

3 Proposed Mud Circulating System:

Depth 0-400'

Mud Wt: 8.4-8.6

Viscosity: 30-32

Fluid Loss: May lose Circ

Type: Mud Fresh water spud mud add paper to control seepage and high viscosity sweeps to clean hole.

Depth: 400'- 2650'

Mud Wt: 9.7 - 10.0

Viscosity: 28 - 29

Fluid Loss: May lose circ.

Type: Brine water. Add paper as needed to control seepage and add lime to control pH (9-10). Use high viscosity sweeps to clean hole.

Depth: 2650' - 8300'  
Mud Weight: 8.4 - 9.9  
Viscosity: 28 - 29  
Fluid Loss: NC  
Type: Fresh water. Paper for seepage. Lime for pH (9 - 9.5)

Depth: 8300' - 10000'  
Mud Wt: 8.45 - 8.9  
Viscosity: 28 - 29  
Fluid Loss: NC  
Type: Cut brine. Caustic for pH control.

Depth: 10000' - 12150'  
Mud Wt: 8.9 - 9.7  
Viscosity: 29 - 45  
Fluid Loss: NC  
Type: 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 DSTs, 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.