

9. The proposed casing program is as follows:
- Surface: 13-3/8" 48# H40 ST&C new casing set at 700'
- Intermediate: 9-5/8" 36# K55 ST&C new casing from 0-5250'
- Protection: 7" 26# N80 ST&C new casing from 0-12500'
- Production: 4-1/2" 11.6# P110 LT&C new casing from 12300-15800'
10. Casing setting depth and cementing program:
- A. 13-3/8" surface casing set at 700' in 17-1/2" hole.
Circulate cement with 450sx 35:65 POZ/C w/ 6% Bentonite + 2% CaCl_2 + 5#/sx LCM-1 followed by 200sx Class C w/ 2% CaCl_2 .
If cement does not circulate, a temperature survey will be run to find the TOC and then finish cementing to surface through 1" using Class C with 2% CaCl_2 .
- B. 9-5/8" intermediate casing set at 5250' in 12-1/4" hole.
Circulate cement in two stages - DV tool at 3000' -
1st Stage - 469sx 35:65 POZ/C with 6% Bentonite + 5% Sodium Chloride + 5#/sx LCM-1 followed by 250sx Cl C with 1% CaCl_2 .
2nd Stage - 663sx 35:65 POZ/C with 6% Bentonite + 5% Sodium Chloride + 5#/sx LCM-1 followed by 100sx Cl C with 1% CaCl_2 .
If cement does not circulate, a temperature survey will be run to find the TOC and then finish cementing to surface through 1" using Class C with 2% CaCl_2 .
- C. 7" protection casing set at 12500' in 8-3/4" hole. Cement with 600sx 15:61:11 POZ/C/CSE w/ .5% FL-25 + .5% FL-52 + 8#/sx Gilsonite followed by 75sx Class C w/ .7% FL-25. Estimated top of cement is 8000'.
- D. 4-1/2" liner set at 12500-15800' in 6-1/2" hole. Cement with 520sx Class H w/ 1% FL-62 + .4% CD-32 + 1#/sx BA-61
- Note: Cement volumes may need to be adjusted to hole caliper.
11. Pressure Control Equipment
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| 0-700' | None |
| 700-5250' | 13-5/8" 3000# annular preventer. Exhibit A. |
| 5250-12500' | 11" 5000# ram type preventers with one set blind rams and one set 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 at 8300'. Exhibit A. |
| 12500-15800' | 7-1/16" 10000# ram type preventers with one set blind rams and one set pipe rams and a 10000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head at 12500'. Exhibit A. |