

REVISED CASING AND CEMENT DESIGN - NEBU #60A

Casing

9-5/8" Surface cemented in a 12-1/4" Hole at 250 ft.

32.3 # H-40 ST&C 8 Rnd
Baffle Plate
Saw Tooth Guide Shoe

1 Centralizer per joint on bottom 3 joints and on sawtooth.
Pressure test casing and BOPE to 1500 psi for 30 minutes.

7" Intermediate cemented in a 8-3/4" hole. This string will be 50 - 100 feet into the Lewis formation.

23# J-55 LT&C 8 Rnd
Float Collar
Joint
Float Shoe

Float equipment is large port, auto fill.
1 Centralizer per joint on bottom 3 joints
1 Centralizer every third joint to 2100'.

4-1/2" Production cemented in a 6-1/4" hole. This string will be at the top of the Burro Canyon-Dakota sand.

11.6# J-55 LT&C 8 Rnd (134 Joints)
10' Marker Joint
11.6# J-55 LT&C 8 Rnd (70 Joints)
Float Collar
Single Joint
Float Shoe

1 Centralizer per joint on bottom 3 joints
1 Centralizer every fourth joint to 5000'

Cement

9-5/8" Surface

Cmt'd with 200 sx CI B mixed at 15.6 ppg w/ .25 pps celloflake, 2% calicum chloride

Cement yield = 1.19 ft³/sx

Circulate hole on rig pump with Mud for 30 minutes at 5 BPM
Preflush with 20 BBLs fresh water
Pump cement at 4-5 BPM
Drop plug and displace with water
Wait on Cement time prior to drilling out is 8 hours

7" Intermediate

Lead: 320 sx 50 /50 Poz Cement at 13 lb/gal, 1.44 ft³/sx [BASE SLURRY PRIOR TO FOAMING]

FOAMED SLURRY 9 lb/gal, 2.18 ft³/sx , with 266 scf/bbl N2

48 hr foam crush strength = 525 psi

Circulate hole on rig pump with mud and LCM pills for 1 hour at 5-6 BPM

Preflush with 10 mix water, 20 BBL Super Flush 101, 10 BBL mix water at 5 BPM

Pump cement at 4-5 BPM MAXIMUM RATE IS 5 BPM

Tail: 70 sx 50 /50 Poz Cement at 13 lb/gal, 1.44 ft³/sx

Pump cement at 4-5 BPM MAXIMUM RATE IS 5 BPM

Top out Cement: 100 sx Class "B" Cement at 15.6 lb/gal, 1.19 ft³/sx