

Carl Allen 10

API: 05-081-05485

Proposed plugging procedure

1. Prior to job, notify COGCC of plugging operations and schedule for an inspector to be present on location with at least 48-hour notice.
2. Daily and prior to any change in job objective, a JSA must be filled out and records kept.
3. Move-in and rig up a contract workover rig with pipe racks, catwalk, rig pump, rig tank and cement returns tank.
4. Move-in and spot one 400 bbl tank with fresh water.
5. Check and record tubing pressure and casing pressure. Bleed-off any pressures to rig tank.
6. Kill well by pumping water down the tubing.
7. ND production tree. Install a 7-1/16" 5K psi hydraulically operated double gate BOP equipped with 2-7/8" pipe rams in the top gate and blind rams in the bottom gate. Function test both the blind and pipe rams. Hook up a flow line from the BOP to the rig tank.
 - Tubing spool is NSCo. 8" x 6" series 400.
8. Pick up and un-land hanger.
9. POOH scanning and laying down tubing. Visually inspect threads and pins for corrosion. Remove joints with excessive wall loss or bad pin ends.
10. Take delivery of work string needed after inspection to run scraper to top of perforations at 2,800'.
11. Pick up a bit and casing scraper dressed for 5-1/2" 15.5# casing. TIH on work string to \pm 2,800'.
12. POOH standing back tubing. Lay down bit and scraper.
13. RIH with CBL to determine top of cement.
 - Calculated TOC is at 2,400'.

Plug 1 (Squeeze Wasatch Perforations) & Spacer

14. Pick up a cast iron cement retainer (CICR) dressed for 5-1/2", 15.5# casing and trip in hole on tubing. Set retainer at \pm 2,750'.
 - Set CICR no more than 100' above top perforation at 2,800'.
15. Pressure test tubing and valve in CICR to 2,500 psi.

16. Pressure test casing to 500 psi.
 - If casing will not test, notify engineering. Casing holes will be located after perforations have been squeezed.
17. Shear out of retainer and circulate a hole volume of fresh water.
 - Approx. 16 bbls tbg + 44 bbls ann = 60 bbls.
18. Sting into CICR. Rig up cementers. Establish an injection rate and pressure through the CICR with at least the tubing volume.
 - If no injection rate can be established, then contact Engineering.
19. Shear out of CICR. Mix 25 sacks (± 6 bbl) of cement and displace to end of tubing.
 - Volume is calculated from CICR set at 2,750' to bottom perforation at 2,820' with a 50% excess.
20. Sting into the retainer and squeeze the perforations with 10 sacks (± 3 bbl) of cement below CICR.
21. Sting out and slowly POOH 100'. Reverse circulate out any remaining cement leaving 15 sacks (± 3 bbl) on top of the retainer.
 - COGCC requires a minimum of 100' in length of any cement plug and a minimum of 100' above each zone being protected.
22. Spot 9 ppg Poz Gel from top of Plug 1 (approx. 2,650') to 2,500' (± 4 bbl).
23. POOH laying down to surface.

Plug 2 (Balanced Cement Plug Across TOC) & Spacer 2

24. Lay a 200' balanced cement plug from 2,500' to 2,300' with 25 sacks (± 5 bbl).
 - Use CBL to determine TOC. TOC is calculated at 2,400'.
25. Spot 9 ppg Poz Gel from 2,300' to 150' (± 50 bbl).

Plug 3 (Squeeze Surface Casing Shoe and Surface Plug)

26. RU wireline to perforate casing with 4 spf at 150' ($\pm 50'$ below the casing shoe). POOH with wireline.
27. Establish circulation between 5-1/2" casing and 9-5/8" annulus. Circulate 1.5x hole volume.
 - Approx. 4 bbls (5-1/2" csg) + 7 bbls (5-1/2" csg x 9-5/8" ann) = 11 bbls hole volume.
28. Mix and pump 55 sacks (± 11 bbl) of cement to surface. If no cement to surface, then continue to mix and pump cement to surface.
29. PU 5-1/2" internal casing cutter. RIH, cut and drop the 5-1/2" production casing from 4' below GL or cellar bottom. ND BOPE and RD workover rig.
30. Excavate around wellhead and cut off wellhead 4' below ground level or cellar bottom.
31. Install a regulation dry hole marker on casing stub. Note the GPS coordinates of the wellbore location for future reference.
32. Backfill around the dry hole marker. Clean out and remove cement tank. Move off location.

33. Reclaim location per Federal and State requirements.