

REMEDIAL CEMENT PROCEDURE

MUDGE A 11

MAR. 18, 1992 (ORIGINAL VERSION)

Note: Because the intermediate pressure immediately dropped when the bradenhead was opened on 6/1/91, a packoff leak between the 9 5/8" and 7" casings is suspected.

1. Record TP, SICP, Intermediate Casing, and BH pressures.
2. MIRUSU.
3. Install BOP.
4. TOH hot with 1 1/4" tubing if possible and lay down.
5. TOH hot with 2 1/16" tubing and Baker model D production packer and lay down.
6. TIH hot with RBP for 5 1/2" casing and 2 3/8" tubing. Set RBP at 4900' and cap with sand.
7. Determine free point of 5 1/2" casing.
8. Blow down intermediate annulus and bradenhead pressures.
9. TIH with string shot and back off of 5 1/2" casing at the nearest joint above the free point.
10. TOH with 5 1/2" casing. Inspect and note any worthy findings of pipe condition and replace any bad joints.
11. Clean out hole to 5 1/2" casing top. Use casing scraper for 7", 20 lb/ft casing.
12. TIH with packer and set in the 7" casing just above the 5 1/2" casing top.
13. Pressure test casing top to 500 psi. Do not squeeze if test fails.
14. Pressure test 7" casing to 1000 psi. If test fails, locate leaks coming out of the hole.
15. TIH with RBP for 7" casing and set just above the casing top.
16. Run a GR/CBL from RBP to surface and determine top of cement for 7" casing. Make additional passes at higher pressures if bonding is not clear.
17. Reset RBP 50' below TOC in 7" casing.
18. Perf two holes within 50' of the TOC.
19. Set a packer 300' above TOC in 7" casing. If leaks were found above this point, a different approach to the squeeze may be necessary.
20. Establish circulation to surface, calculate annular volume with a dye. Annular volume is expected to be around 70 bbl.
21. Pump a preflush for high fluid loss applications prior to the squeeze.
22. Pump 300% of annular volume of cement with 2% CaCl₂ and 3% gel through tubing. Do not displace.
23. Release packer and reverse out cement. Hold pressure on squeeze.
24. WOC at least 24 hours.
25. Drill out cement to uppermost RBP. If cement is not set, shut down for an additional 24 hours.
26. Pressure test squeeze perfs to 1000 psi; run CBL if pressure holds.
27. Resqueeze until pressure test holds, and cement is to surface.
28. Retrieve upper RBP.
29. TIH with 5 1/2" casing, screw in joint, and DV tool. Tie back into 5 1/2" casing. If pressure test held in step 13, do not run DV tool and skip ahead to step 33.
30. Open DV tool, establish circulation to surface, and cement with 100 sacks of neat cement.
31. WOC at least 24 hours.
32. TIH with bit and casing scraper and drill out to RBP.
33. TOH with RBP.
34. TIH with 2 3/8" tubing and clean out wellbore to PBTD (7385'). TOH.
35. TIH with tubing, packer, and RBP. Set RBP at 7370' and packer at 7100'.