

## PLUG AND ABANDONMENT PROCEDURE

### Selby 8-32

1. Note: Production Casing = 2-7/8" OD, 6.5#/ft, J-55; Production Hole Drilled @ 7 7/8."
2. Provide 48 hr notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Call foreman or lead operator at least 24 hr prior to rig move. Request they catch and remove the plunger, isolate production equipment and remove any automation prior to rig showing up. Install perimeter fence as needed.
3. MIRU slickline services. Pull bumper spring and tag bottom. RDMO SL.
4. Prepare location for base beam equipped rig.
5. MIRU, kill as necessary using clean fresh water with biocide and circulate. ND WH. NU BOP. Unseat landing jt, LD.
6. Notify cementers to be on call. Provide volumes listed below:
  - 6.1 Niobrara Plug: 13 cu ft/10 sx class G w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 mixed at 15.8 ppg and 1.38 cuft/sk (400' inside 2-7/8" Casing, no excess)
  - 6.2 SX Wiper Plug: 437 cu ft/380 sx class "G" w/0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx (265 sx for 9-1/4" + 20% excess and 15 sx 2-7/8" casing, no excess).
  - 6.3 Stub Plug: 279 cu ft/210 sx Type III CaCl<sub>2</sub> cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (200' in 9-1/2" OH + 40% excess, and 200' in 8 5/8" surface casing).
7. TOOH 1.66" OD production tubing. Stand Back.
8. MIRU SL and VES. Run gyro survey from 6940' to surface with stops every 100' RDMO slickline services. Forward gyro survey data to Sabrina Frantz and invoices to Sabrina Frantz. RDMO SL and VES.
9. MIRU WL. RIH gauge ring for 2-7/8" 6.5#/ft casing to 6630'. POOH.
10. RIH CIBP w/ WL. Set at +/- 6550' (collars located at 6530' and 6563'). Pressure test CIBP to 1000 psi.
11. Run CBL from 6500' to surface. Send results to Tyler.Davis@anadarko.com and Brent.Marchant@anadarko.com.
12. RIH to 6550' with 1.66" OD tbg hydrotesting to 3000 psi.
13. RU Cementers. Pump Niobrara Plug: 10 sx class G w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 mixed at 15.8 ppg and 1.38 cuft/sk to place cement in 2-7/8" production casing from 6550' to 6150'.
14. PUH to 9 stands. Circulate tubing clean. Then, TOOH.
15. MIRU WL. PU 2" RTG perf gun with 3 spf, 0.5" dia 120deg phasing. Shoot 1' of squeeze holes at 4550'. RDMO WL.
16. Establish circulation down 2-7/8" and out 8-5/8" surface casing. RU Cementers. Pump: 437 cu ft/380 sx class "G" w/0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx to squeeze cement into annulus and place in casing from 4550' to 3705'. Follow w/wiper plug and displace to 3705'. WOC 4 hrs and tag TOC. Notify engineering if tag depth is deeper than 3705'.
17. RU WL. Shoot off casing at or below 645'. RDMO WL. Circulate one full circulation with water containing biocide to remove any gas.

18. NDBOP, NDTH.
19. Install BOP on casing head with 2-7/8" pipe rams.
20. TOO H with 2-7/8" casing, LD.
21. RIH with 1.66" OD tubing to 745'.
22. RU Cementers. Pump Stub Plug: 159 cu ft/120 sx Type III CaCl<sub>2</sub> cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx from 745' to 345' (100' in 2-7/8", 100' in 9-1/2" OH + 40% excess, and 200' in 8 5/8" surface casing).
23. PUH to ~300'. Circulate 5 bbls water containing biocide to clear tubing.
24. TOO H. WOC 4 hrs. Tag Cement. Cement top needs to be above 345'; Proceed assuming TOC is above 345'. Otherwise, call production engineer.
25. MIRU WL. RIH 8 5/8" CIBP to 80'. Set, PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
26. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries and invoices to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com) within 24 hrs of the completion of the job.
27. Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
28. Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
29. Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
30. Welder cut 8 5/8" casing minimum 5' below ground level.
31. MIRU ready cement mixer. Use 4500 psi compressive strength cement, (NO gravel) fill stubout.
32. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
33. Properly abandon flowlines per Rule 1103.
34. Back fill hole with fill. Clean location, level.
35. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.