

PLUG AND ABANDONMENT PROCEDURE

Lloyd Camp 14-31

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 IOC (970-506-5980) at least 24 hr prior to rig move. Request they catch and remove plunger, isolate production equipment and remove any automation prior to rig MIRU.
3. MIRU slickline services. Pull bumper spring and tag bottom. RD slickline services.
4. Prepare location for base beam equipped rig. Install perimeter fence as needed.
5. Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
6. MIRU, kill well as necessary using clean fresh water with biocide and circulate. ND WH. NU BOP. Unseat landing jt, LD.
7. Notify cementers to be on call. Provide volumes listed below:
 - 7.1 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)
 - 7.2 SX Wiper Plug: 241 cu ft/210 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 (400' in 9" OH + 20% excess and 400' inside 2-7/8" casing, no excess).
 - 7.3 Stub Plug: 505 cu ft/380 sx Type III CaCl₂ cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx (669' in 9" OH + 40% excess, and 201' in 8 5/8" surface casing).
8. TOOH 1.66" OD production tubing.
9. MIRU WL. RIH gauge ring for 2-7/8" 6.5#/ft casing to 7090'. POOH.
10. RIH CIBP w/ WL. Set at +/- 7020'. Pressure test CIBP to 1000 psi.
11. Run CBL from 7020' to surface. Send results to Tyler.Davis@anadarko.com and Brent.Marchant@anadarko.com. Note: it is important to get a good quality CBL. It may be necessary to circulate from just above CIBP to surface in order to get gas out of the hole.
12. RIH to 7020' 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 7020' to 6620'.
14. PUH to 6400'. Circulate 40 bbls water containing biocide to clear tubing. Then, TOOH.
15. MIRU WL. PU 2" RTG perf gun with 3 spf, 0.5" dia 120deg phasing. Shoot 1' of squeeze holes at 4560'. RDMO WL.
16. Establish circulation down 2-7/8" and out 8-5/8" surface casing. RU Cementers. Pump: 241 cu ft/210 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 4560' to 4160' (9" OH + 20% excess). Follow w/wiper plug and displace to 4160'.
17. WOC 4 hrs and tag TOC. Notify engineering if tag depth is deeper than 4160'.

18. PT down the 2-7/8" to 2500 psi. If PT passes, plan on using 2-7/8" as a WS and LD 1.66" tbg. If PT fails, plan on using 1.66" as WS.
19. RU WL. Shoot off casing at or below 1460'. RDMO WL. PUH 5' and circulate water containing biocide to remove any gas.
20. NDBOP, NDTH.
21. Install BOP on casing head with 2-7/8" pipe rams.
22. RU Cementers. Pump 10 bbl SAPP with a minimum of 20 bbl fresh water spacer. Pump Stub Plug: 505 cu ft/ 380 sx Type III CaCl₂ cement w/0.25 pps cello flake mixed at 14.8 ppg and 1.33 cf/sx from 1460' to 590'.
23. PUH to ~300' with 2-7/8" casing. Circulate 20 bbls water containing biocide to clear cement.
24. TOOH 2-7/8" csg. WOC 4 hrs.
25. Tag Cement. Cement top needs to be above 590'; Proceed assuming TOC is above 590'. Otherwise, call production engineer.
26. MIRU WL. RIH 8 5/8" CIBP to 80'. Set, PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
27. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries and invoices to rscDJVendors@anadarko.com within 24 hrs of the completion of the job.
28. Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
29. Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
30. Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
31. Welder cut 8 5/8" casing minimum 5' below ground level.
32. MIRU ready cement mixer. Use 4500 psi compressive strength cement, (NO gravel) fill stubout.
33. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
34. Properly abandon flowlines per Rule 1103.
35. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
36. Back fill hole with fill. Clean location, level.
37. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.