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**PLUG AND ABANDONMENT PROCEDURE  
COUGHLIN RED VV 22-1, API 05-123-16665**

**Steps**

1. Provide 48 hour 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 hours prior to rig move. Request they isolate production equipment and remove any automation prior to rig MIRU.
2. MIRU slickline services. Pull bumper spring and tag bottom. RDMO slickline services.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. Check and record Braden head pressure. If Braden head valve is not accessible, re-plumb so that valve is above GL.
5. MIRU, kill as necessary using clean fresh water with biocide. NDWH. NUBOP. Unseat landing jt, LD.
6. Notify cementers to be on call. Provide volumes listed below:
  - 6.1 Codell plug: 30 sx (41 cu-ft) "G" w/silica flour, 0.4% CD-32, 0.4 ASA-301 and R-3 to achieve 2:30 pump time. Mix at 15.8 ppg and 1.38 cu-ft/sk. Cement volume based on 710' in 3 1/2" casing.
  - 6.2 Sussex balance: 35 sx (40 cu-ft) "G" w/0.4% CD-32, 0.4% ASA-301, mixed at 15.8 ppg and 1.15 cu-ft/sk. Cement volume based on 720' in 3 1/2" casing.
  - 6.3 Foxhills plug: 480 sx (638 cu-ft) Type III w/cello flake and CaCl<sub>2</sub> as necessary, mixed at 14.8 ppg and 1.33 cu-ft/sk. Cement volume based on 100' in 10" OH annulus with 40% excess, 640' in 10" OH with 40% excess and 200' in 8 5/8" casing. Nearest caliper measurement at 4200'.
7. Release AS-1X packer at 7474'. Wait 15 minutes and TOO 242 joints of 2 1/16" tubing landed at 7541'. Stand back tubing. Send packer to Centennial Tool Services for redressing.
8. MIRU WL. PU 3 1/2" 9.3# gauge ring and RIH w/WL to 7550'. POOH.
9. PU 3 1/2" 9.3# CIBP and RIH w/WL. Set at +/-7510' to abandon Codell perms. PT to only 500 psi due to squeeze perms at 4975'.
10. RIH with 2 1/16" production tubing to +/- 7510'. Tag CIBP and PUH 5'. Hydrotest tubing to 3000 psi while RIH.
11. RU cementers. Pump Codell plug: 30 sx (41 cu-ft) "G" w/silica flour, 0.4% CD-32, 0.4 ASA-301 and R-3 to achieve 2:30 pump time. Mix at 15.8 ppg and 1.38 cu-ft/sk. Plug to cover 7510'-6800'.
12. PUH to ~6500'. Circulate with water containing biocide to displace cement and clear tubing.
13. PUH to 5150'. LD remainder.
14. Pump Sussex plug: 35 sx (40 cu-ft) "G" w/0.4% CD-32, 0.4% ASA-301, mixed at 15.8 ppg and 1.15 cu-ft/sk. Plug to cover from 5150'-4380'.

15. WOC per Cement Company's recommendation. RIH with 2 1/16" tubing and tag cement at or above 4380'. If not, consult with Evans Engineering.
16. P&SB 1540'. LD remainder.
17. Shoot off casing at or below 1440'. RD WL. Circulate casing with water containing biocide to remove any excess gas.
18. NDBOP, NDTH.
19. Install BOP on casing head with 3 1/2" pipe rams.
20. TOOH 3 1/2" casing, LD.
21. RIH with 2 1/16" tubing to +/- 1540'.
22. RU cementers. Precede cement with 10 bbl SAPP and a 20 bbl (minimum) fresh water spacer.
23. Pump Foxhills plug: 480 sx (638 cu-ft) Type III w/cello flake and CaCl<sub>2</sub> as necessary, mixed at 14.8 ppg and 1.33 cu-ft/sk. Plug to cover from 1540'-1440' in 10" OH annulus with 40% excess, 1440'-800' in 10" OH with 40% excess, and 800'-600' in 8 5/8" casing. Nearest caliper measurement was at 4200'.
24. PUH to 300' and circulate clean. TOOH and WOC per cement company recommendations.
25. RIH with 2 1/16" tubing and tag cement at or above 600'. If not consult with Evans Engineering.
26. RU WL. PU 8 5/8" 24# CIBP and RIH to 80'. Set and PT to 1000 psi for 15 minutes. If tests, RDMO WL and WO rig.
27. Instruct cementing and wireline contractors to email copies of all job logs/jobs summaries to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com) within 24 hours of completion of the job.
28. Supervisor is to 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 casing minimum 5' below ground level.
31. Welder cut casing minimum 5' below ground level.
32. Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
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. Obtain GPS location data as per COGCC Rule 215 and send to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com).
35. Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
36. Back fill hole with fill. Clean location, level.