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## PLUG and ABANDONMENT PROCEDURE

REYNOLDS 2-24

API: 05-123-24157

### Description

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.). Notify Automation Removal Group at least 24 hours prior to rig move. Request they catch and remove plunger, isolate production equipment, and remove any automation prior to rig MIRU.
2. MIRU Slickline. Pull production equipment and tag bottom. Record tag depth in Open Wells. Directional Survey was run on 10/31/06. RDMO Slickline.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. Verify COAs before RU.
5. Upon RU, check and record bradenhead pressure. If bradenhead valve is not accessible, re-plumb so that valve is above GL. Blow down bradenhead and re-check pressure the next day. Repeat until pressure stays at 0 psi.
6. Refer to BOP testing guidelines, fluid barrier management, and tripping best practices as applicable. All wireline operations will need a flanged changeover, WL BOP, Lubricator with an ID to fit the largest OD of the toolstring, and a packoff. Please contact foreman to discuss arrangement of stack, or alternate plan. Contact your foremen with any questions regarding standard operating procedures or any potential deviations.
7. MIRU WO rig. Kill well as necessary using biocide treated fresh water. Verify BOP and wellhead rating, inspect for appropriate API standards, pressure test BOP according to VWP BOP testing guidelines. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
8. TOOH and SB 4100' 2-3/8" tbg. LD any remainder.
9. MIRU WL. PU and RIH with (4-1/2", 11.6#) gauge ring to 7770'. POOH.
10. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7760' (collars at 7742' & 7784'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
11. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7300' (collars at 7278' & 7320'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
12. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7060' (collars at 7042' & 7084'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
13. Load hole with biocide treated fresh water. PT CIBP to 500 psi for 15 minutes. A good PT has less than 10% loss in pressure and stabilization at the end of the test. Test can be extended longer in time if need be. Contact Foreman or Engineer to confirm proceeding after pressure test.
14. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 4100' (collars at 4088' & 4130'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
15. TIH with 2-3/8" tbg to 4100'. Circulate any gas out. TOOH, LD all tbg.
16. MIRU WL. PU and RIH with one 3-1/8" perf gun, 4' with 4 spf, 120 deg phasing. Shoot 4' shot at 835'. POOH. RDMO WL.
17. Attempt to establish circulation and circulate with fresh water containing biocide to remove any gas.
18. ND BOP. ND TH. Install swedge to casing collar.

19. Establish circulation to surface with biocide treated fresh water and pump at least two hole-volumes (112 bbl) to circulate all gas out of the well. Contact engineering if evidence of gas migration persists.
20. Verify gas migration before pumping cement. Contact engineering if pressure continues.
21. MIRU cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Stub Plug: Pump 360 sx (78.9 bbl or 443 cf), assuming 15.8 ppg & 1.23 cf/sk. Volume is based on 781' in 4-1/2" casing with no excess, 54' in 4-1/2" X 7.875" bit size open hole with 100% excess factor, 781' in the 4-1/2" X 8-5/8", 24# surface casing with no excess plus an additional 100 sx. The plug is designed to cover 835'-0'. Verify and document cement to surface. Collect wet and dry samples of cement to be left on rig. RDMO Cementers. Notify engineering if circulation is ever lost during job.
22. Tag cement as needed to verify cement to surface. RDMO WO rig.
23. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com) within 24 hours of completion of the job.
24. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
25. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
26. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
27. Welder cut casing minimum 5' below ground level.
28. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
29. Obtain GPS location data as per COGCC Rule 215 and send to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com).
30. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
31. Back fill hole with fill. Clean location, and level.
32. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.