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## PLUG and ABANDONMENT PROCEDURE

### GREGG 1

#### 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. Gyro was run on 01/00/00. 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. MIRU WO rig. Spot a min of 25 jts of 2-3/8" 4.7#, J-55, EUE tbg. Kill well as necessary using biocide treated fresh water. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
7. TOOH and SB 6660' 2-3/8" tbg. LD any remainder.
8. PU and TIH with (4-1/2", 11.6#) Bit and Scraper on 2-3/8" tbg to 6670'. TOOH, SB all 2-3/8" tbg. LD Bit and Scraper.
9. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 6660'. POOH. RDMO WL.
10. MIRU Hydrotesters. TIH with 2-3/8" tbg to 6660' while hydrotesting to 3000 psi. RDMO Hydrotesters.
11. Load hole with biocide treated fresh water and circulate all gas out of well. PT CIBP to 1000psi for 15 minutes.
12. MIRU Cementers. Pump Niobrara Balance Plug: Pump 25 sx (6.9 bbl or 39 cf), assuming 15.8 ppg & 1.53 cf/sk. Volume based on 400' inside 4-1/2", 11.6# production casing with no excess. Cement will be from 6660'-6260'. RD Cementers.
13. Slowly pull out of the cement and TOOH to 5760'. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOOH and SB 580' of 2-3/8" tbg. LD remaining tbg.
14. MIRU WL. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 3680' (collars at 3634' & 3688'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
15. PU and RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 950' and 4' of squeeze holes at 550'. RDMO WL.
16. PU and TIH with (4-1/2", 11.6#) CICR on 2-3/8" tbg. Set CICR at 580'.
17. Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole.
18. \*\*\*THE FOLLOWING TWO PLUGS WILL BE PUMPED BACK-TO-BACK\*\*\*
19. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Fox Hills Squeeze: 120 sx (32.3 bbl or 182 cf) with 0.25 lb/sk polyflake, assuming 15.8 ppg & 1.51 cf/sk. DO NOT Underdisplace. Volume is based on 370' below the CICR inside 4-1/2", 11.6#

production casing with no excess, 400' in the 4-1/2", 11.6# annulus assuming 7.88" bit size with 60% excess. RD Cementers. Release tbg from the CICR.

20. RU Cementers. Pump Balance Plug: 30 sx (8.1 bbl or 45 cf) , assuming 15.8 ppg & 1.5 cf/sk. Volume is based on 475' in 4-1/2", 11.6# production casing with no excess. The plug is designed to cover 580'-105'. RDMO Cementers.
21. Slowly pull out of the cement and TOO H to 100'. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOO H, LD all 2-3/8" tbg.
22. MIRU WL. Tag cement as needed. After tagging top of cement, and verifying appropriate coverage above the surface casing shoe, pressure test surface casing to 500 psi and hold for 15 minutes.
23. RIH 4-1/2", 11.6# CIBP to 80'. RDMO WL and WO rig.
24. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hours of completion of the job.
25. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
26. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
27. Capping crew will set and secure night cap on 4-1/2", 11.6# casing head, restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
28. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
29. Welder cut casing minimum 5' below ground level.
30. Fill production and surface casing to surface using 4500 psi compressive strength cement (NO gravel).
31. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
32. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
33. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
34. Back fill hole with fill. Clean location, and level.
35. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.