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## PLUG and ABANDONMENT PROCEDURE

HSR-MAGNESS 10-25

API: 05-123-18910

### 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 11/06/14. RDMO Slickline.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. COA: Verify Form 17 (State Bradenhead Test) has been run within 60 days of RU. If Form 17 required sampling, contact Engineering to verify plugging orders before beginning P&A operations.
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 BOP testing guidelines. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
8. Once well has been killed, pump an additional 200bbls of water to ensure wellbore is clear of gas. Must maintain full column of fluid or constant pump rate to keep gas out until top perforations are covered with a cast iron bridge plug.
9. TOOH and SB 850' 2-1/16" tbg. LD Remaining.
10. MIRU WL. PU and RIH with (3-1/2", 7.7#) gauge ring to 7010'. POOH.
11. PU and RIH with (3-1/2", 7.7#) CIBP and set at +/- 7000' (collars at 6967' & 7011'). POOH. RDMO WL.
12. COA: Confirm and document static conditions in the well before placing the Sussex plug. If there is evidence of pressure or fluid migration at any time after placing the Niobrara plug, contact Engineering.
13. Top fill hole with biocide treated 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. RIH and dump 2 sx cement on CIBP. POOH.
15. MIRU WL. PU and RIH with (3-1/2", 7.7#) CIBP and set at +/- 4020' (collars at 3989' & 4032'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
16. PU and TIH with mechanical cutter on 2-1/16" tbg. Cut 3-1/2", 7.7# casing at 850'. TOOH and LD cutter.
17. Attempt to establish circulation and circulate (0 bbl) with fresh water containing biocide to remove any gas.

18. ND BOP. ND TH. Un-land casing using a casing spear, not a lifting sub. Rig max pull shall be 100,000#. Max pull over string weight shall be 50,000#. If unable to unland, contact Engineering.
19. Install BOP on casing head with 3-1/2", 7.7# pipe rams.
20. TOOH and LD all 3-1/2", 7.7# casing. Remove 3-1/2", 7.7# pipe rams and install 2-3/8" pipe rams.
21. Spot a min of 30 jts of 2-3/8" tbg.
22. TIH with mule shoe on 2-3/8" tubing to 850'. Establish circulation to surface with biocide treated fresh water and pump at least two hole-volumes to clean up wellbore.
23. MIRU Cementers. Pump 10 bbl pre flush then a 5 bbl water spacer. Pump surface plug: 300 sx (65.7 bbls or 369 cuft) Class G, assuming 15.8 ppg & 1.23 yld with 0.40% Latex, 2% Calcium Chloride, and 4% Gypsum. Mix water must be 70°F (may have to bring out cold water to dilute heated water). Volume is based on 101' in 7.875" open hole with 100% excess, and 749' in 8-5/8" surface casing annulus with no excess plus an additional 50 sx. This plug is designed to cover 850' - 0'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers. Notify engineering if circulation is ever lost during the job. Note: plug length exceeds 800' - split into two stages by pumping 150 sx, tooh to 400', pump remaining 150 sx.
24. Pull out of cement at a rate of 1 jt/min. TOOH, LD all 2-3/8" tbg. PU and TIH with 16' of tbg subs. Top off cement to surface. Circulate clean. RDMO cementers. TOOH and LD tbg subs. RDMO WO rig.
25. 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.
26. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
27. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
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. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
31. Obtain GPS location data as per COGCC Rule 215 and send to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com).
32. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
33. Back fill hole with fill. Clean location, and level.
34. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.