

PLUG and ABANDONMENT PROCEDURE

HSR-ACORD 13-29

Step	Description of Work
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| 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 and VES. Pull bumper spring and tag bottom. Record tag depth in Open Wells. Well needs gyro. Run gyro from 7710' to surface making stops every 100ft. RDMO Slickline and VES. |
| 3. | Prepare location for base beam equipped rig. Install perimeter fence as needed. |
| 4. | 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. |
| 5. | 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. |
| 6. | TOOH and SB all 2-3/8" tbg. |
| 7. | PU and TIH w/ (4-1/2", 11.6#) bit and scraper to just above liner top at 7290'. Note that liner top is at 7294. TOOH standing back all 2-3/8" tbg. |
| 8. | MIRU WL. PIRIH w/ (4-1/2", 11.6#) CIBP on WL and set at 7280'. POOH. |
| 9. | RIH and dump bail 2sxs on top of CIBP at 7280'. POOH. |
| 10. | PIRIH w/ (4-1/2", 11.6#) CIBP on WL and set at 6900'. POOH. RDMO WL. |
| 11. | TIH with 2-3/8" tbg to 6900'. Load hole with biocide treated water and circulate all gas out of hole. PT csg and CIBP to 1000psi. |
| 12. | <u>MIRU Cementers.</u> Niobrara/Codell Balance Plug: Pump 25 sxs (62 cf) 15.8 ppg & 1.53 cf/sk. Volume based on 400' inside 4-1/2" production casing with no excess. Cement will be from 6900' – 6500'. RD Cementers. |
| 13. | Slowly pull out of the cement and PUH to 6000'. Reverse circulate tbg clean to ensure no cement is left in the tbg. |
| 14. | TOOH and SB 915' 2-3/8" tbg, LD remaining tbg. |
| 15. | MIRU WL. PIRIH w/ (4-1/2", 11.6#) CIBP on WL and set at 3884'. POOH. |
| 16. | RIH and dump bail 2sxs on top of CIBP at 3884'. POOH. |
| 17. | RIH and jet cut 4-1/2" casing at 815'. RDMO WL. |
| 18. | Attempt to circulate with biocide treated fresh water to remove any gas. |
| 19. | 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. |
| 20. | Install BOP on casing head with 4-1/2" pipe rams. |
| 21. | TOOH and LD all 4-1/2" casing. Remove 4-1/2" pipe rams and install 2-3/8" pipe rams. |
| 22. | TIH with 2-3/8" tbg to 915'. |
| 23. | Establish circulation with biocide treated fresh water and pump one hole volume (55 bbls). |
| 24. | <u>RU Cementers.</u> Pump Stub Plug: Pump 10 bbls (min) SAPP and 5 bbls fresh water spacer followed by 190 sx (203 cf) .25lb/sk polyflake, 15.8 ppg, & 1.16 cf/sk GasBlok cement. Volume is based on 100' in 4-1/2" production casing with no excess, 200' in 7-7/8" bit size OH with |

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- 100% excess, and 200' in 8-5/8" surface casing with no excess. The plug will cover 915 – 419. RDMO Cementers.
25. Slowly pull out of the cement and PUH to 100'. Reverse circulate using biocide treated fresh water to ensure the tbg is clean. WOC per cement company recommendation.
 26. MIRU WL. RIH and tag cement. Cement top needs to be at or above 569' (50' above surface casing shoe at 619'). Call Engineering if tag is lower than 569'. POOH.
 27. RIH (8-5/8", 24#) CIBP to 80'. RDMO WL and WO rig.
 28. 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.
 29. Supervisor submit paper copies of all invoices, logs, and reports to Platteville Engineering Specialist.
 30. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
 31. Capping crew will set and secure night cap on 8 5/8" casing head, restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
 32. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
 33. Welder cut casing minimum 5' below ground level.
 34. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
 35. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
 36. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
 37. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
 38. Back fill hole with fill. Clean location, and level.
 39. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.