

PLUG and ABANDONMENT PROCEDURE

WHISTON 7-4

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 RAN. RDMO slickline and VES. |
| 3. | Prepare location for base beam equipped rig. Install perimeter fence as needed. |
| 4. | 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. |
| 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 clean fresh water with biocide. ND WH. NU BOP. Unland tbg using unlanding joint and LD. |
| 6. | TOOH and SB 7110' 2-3/8" tbg. LD Remainder. |
| 7. | MIRU WL. PU and RIH with (4.5", 11.6#) gauge ring to 7120'. POOH. |
| 8. | PU and RIH with (4.5", 11.6#) CIBP and set at +/- 7110' to abandon the Nio and Codell perms. POOH. RDMO WL. |
| 9. | TIH with 2-3/8" tbg while hydrotesting to 3000 psi to 7110'. Circulate all gas from well. Load hole with biocide treated fresh water. PT CIBP to 1000 psi for 15 minutes. |
| 10. | <u>MIRU cementers</u> . Pump Niobrara Balance Plug: Pump 25 SX (39 CF) 15.8 ppg & 1.55 cf/sk. Volume based on 400' inside 4-1/2" production casing. Cement will be from 7110'-6710'. RD cementers. |
| 11. | Slowly pull out of the cement and TOOH to 6210'. Reverse circulate tubing clean to ensure no cement is left in the tubing. |
| 12. | LD tbg while TOOH to 4930'. |
| 13. | Establish circulation to surface with biocide treated fresh water. |
| 14. | <u>RU Cementers</u> . Pump Sussex Balance Plug: Pump 70 SX (82 CF), assuming 15.8 ppg & 1.17 cf/sk. Volume is based on 870' inside 4-1/2" production casing with no excess. Cement will be from 4930'-4060'. RD Cementers. |
| 15. | Slowly pull out of the cement and TOOH to 3560'. Reverse circulate to ensure no cement is left in the tbg. |
| 16. | WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 4067' (200' above the SX top at 4267'). Call Engineering if tag is lower than 4067'. |
| 17. | TOOH and SB 1150' 2-3/8" tbg, LD remaining tbg. |
| 18. | MIRU WL. RIH and cut 4-1/2" casing at 1050'. RDMO WL. |
| 19. | Circulate with fresh water containing biocide to remove any gas. |
| 20. | ND BOP. ND TH. Un-land casing using a casing spear, not a lifting sub. Max pull shall be 100,000#. If unable to unland, contact Engineering. |
| 21. | Install BOP on casing head with 4-1/2" pipe rams. |
| 22. | TOOH and LD all 4-1/2" casing. Remove 4-1/2" pipe rams and install 2-3/8" pipe rams. |
| 23. | RIH with 2-3/8" tubing to 1150'. |

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24. Establish circulation with biocide treated fresh water and pump one hole volume (80 bbls). Pump 10 bbls (min) pre-flush, followed by 5 bbls fresh water spacer.
25. RU Cementers. Pump Stub Plug: 210 SX (244 CF) with 0.25 lb/sk Polyflake, 15.8 ppg & 1.16 cf/sk (100' in 4-1/2" production casing w/ no excess, 283' in 7.88 bit size w/ 60% excess factor, and 200' in 8-5/8" surface casing w/ no excess). The plug is designed to cover 1150' – 567'. RDMO cementers.
26. Slowly pull out of the cement and TOO H to 100'. Reverse Circulate using biocide treated fresh water, to ensure the tubing is clean.
27. WOC per cement company recommendation. TIH and tag cement. Cement top needs to be at or above 717' (50' above the surface casing shoe at 767'). Call Engineering if tag is lower than 717'. PU and TOO H.
28. MIRU WL. RIH 8-5/8" 24# CIBP to 80'. RDMO WL and WO rig.
29. 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.
30. Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
31. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
32. 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.
33. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
34. Welder cut casing minimum 5' below ground level.
35. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
36. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
37. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
38. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
39. Back fill hole with fill. Clean location, and level.
40. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.