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PLUG and ABANDONMENT PROCEDURE

MAYER 33-34

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 05/01/08. 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. Kill well as necessary using biocide treated fresh water. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
7. TOOH and SB 7240' 2-3/8" tbg. LD any remainder.
8. MIRU WL. PU and RIH with (4-1/2", 11.6#) gauge ring to 7250'. POOH.
9. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7240' (collars at 7226' & 7270'). POOH. RDMO WL.
10. TIH with 2-3/8" tbg to 7240'
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 7240'-6840'. RD Cementers.
13. Slowly pull out of the cement and TOOH. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOOH, SB 2380' 2-3/8" tbg. LD remaining tbg.
14. MIRU WL. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 4295' (collars at 4284' & 4328'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
15. Run CCL-GR-CBL-VDL from +/- 4000' to surface to confirm squeeze hole locations. Forward to Engineering. In addition to normal handling, of logs/job summaries, email copies of all cement job logs/job summaries and invoices to DJVendors@anadarko.com within 24 hours of completion of the job.
16. 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 2550' and 4' of squeeze holes at 2350'. RDMO WL.
17. PU and TIH with (4-1/2", 11.6#) CICR on 2-3/8" tbg. Set CICR at 2380'.
18. Establish circulation to surface with biocide treated fresh water, and pump 60 bbls to clean up hole. Max pump pressure with water is 1000 psi.
19. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Bradenhead Squeeze: 95 sx (19.5 bbl or 109 cf) with TXI cement 0.25 lb/sk polyflake, assuming 14 ppg & 1.15 cf/sk. Underdisplace by 3 bbls. Volume is based on 170' below the CICR inside 4-1/2", 11.6#

production casing with no excess, 200' in the 4-1/2", 11.6# annulus assuming 7.88" bit size with 60% excess and 190' on top of the CICR to cover top perms. RD Cementers. Max pump pressure with cement is 700 psi.

20. Slowly pull out of the cement and TOO H to 2000'. Reverse circulate to ensure no cement is left in the tbg.
21. TOO H and SB 1430' of 2-3/8" tbg. LD stinger, and remaining tbg.
22. Shut down a minimum of 8 hours and monitor for gas migration. If pressure exists after 8 hours, contact engineering.
23. MIRU WL. RIH and jet cut 4-1/2", 11.6# casing at 1330'. RDMO WL.
24. Attempt to establish circulation and circulate (100 bbl) with fresh water containing biocide to remove any gas. Max pressure with water is 550 psi.
25. 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.
26. Install BOP on casing head with 4-1/2", 11.6# pipe rams.
27. TOO H and LD all 4-1/2", 11.6# casing. Remove 4-1/2", 11.6# pipe rams and install 2-3/8" pipe rams.
28. TIH with mule shoe and 2-3/8" tubing to 1430'.
29. Establish circulation to surface with biocide treated fresh water and pump at least three hole-volumes (342 bbl) to circulate all gas out of the well. Contact engineering if evidence of gas migration persists.
30. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump GAS BLOK Stub Plug: 360 sx (73.8 bbl or 414 cf) TXI cement with 0.25 lb/sk Polyflake, assuming 14 ppg & 1.15 cf/sk. Volume is based on 100' in 4-1/2", 11.6# production casing with no excess, 484' in 7.88" bit size with 100% excess factor, and 201' in the 8-5/8", 24# surface casing with no excess. The plug is designed to cover 1430'-645'. RDMO Cementers. Notify engineering if circulation is ever lost during job.
31. 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.
32. 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.
33. RIH 8-5/8", 24# CIBP to 80'. RDMO WL and WO rig.
34. 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.
35. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
36. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
37. Capping crew will set and secure night cap on 8-5/8", 24# casing head, restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
38. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
39. Welder cut casing minimum 5' below ground level.
40. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
41. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
42. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
43. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
44. Back fill hole with fill. Clean location, and level.
45. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.