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PLUG and ABANDONMENT PROCEDURE

HALE 27-13

API: 05-123-26962

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 08/15/08. 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 1500' of 2-3/8" tbg. LD remaining 2-3/8" tbg.
10. MIRU WL. PU and RIH with (4-1/2", 11.6#) gauge ring to 7180'. POOH.
11. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7170' (collars at 7137' & 7181'). POOH.
12. 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.
13. RIH dump 2 sx cement on CIBP. POOH.
14. 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.
15. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 4170' (collars at 4140' & 4184'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
16. Ensure hole has been circulated clean to remove gas interference. Run CCL/GR/CBL/VDL log from +/- 4000' to surface to confirm squeeze location. Run one pass with 500 psi on casing. Future operations may change depending on CBL results.

17. Forward logs to engineering and in addition to the 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 job completion. Note that squeeze hole locations and cement volumes may vary depending on CBL results.
18. PU and RIH with one 3-1/8" perf gun with 3 spf, shot type EXP 3323-323T, 0.46 EHD, 120° phasing, 41.17" penetration, and 22.7 gram charge. Shoot 4' of squeeze holes from 1500'-1504'. POOH
19. PU and TIH with packer and perform injection test with fresh water. Contact engineering to verify cement squeeze volume based on the rate. TOOH SB all 2-3/8" tbg, LD Packer.
20. TIH with (4-1/2") CICR on 2-3/8" tbg. Set CICR at 1480'.
21. NOTE: The following cement job is quick setting with a setting time approximately 90 minutes. It should be mixed with approximately 60- 80 deg F mixed water
22. RU Cementers. Pump Latex Squeeze: 25 sx (5.5 bbls or 30.7 cuft) LATEX blend, assuming 15.8 ppg & 1.23 yld with 0.4% latex, 2% CaCl, and 4% gypsum. Confirm max pressure with foreman/engineer. Collect wet and dry samples of cement to be left on rig. RDMO Cementers.
23. Sting out of CICR, underdisplace by 0.5 bbls. LD one joint and reverse circulate clean
24. Finish TOOH. Shut in well and WOC
25. Check and record pressure, notify foreman/engineer
26. COA: Verify and document that all pressure and fluid migration has been eliminated prior to placing the SC shoe plug at 900'. If there is evidence of pressure or fluid migration, contact Engineering.
27. TIH with 2-3/8" tbg to 900'. Establish circulation with biocide treated fresh water. Pump at least two hole volumes to ensure hole is clean.
28. Note: ensure rig crew is ready to pull tubing as soon as cement is done pumping to prevent stuck tubing. Close bradenhead. Pump cement down tubing and out the production casing x tubing annulus.
29. MIRU Cementers. Pump Surface Plug: 65 sx (14 bbls or 80 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 900' in 4.5" production casing with no excess. This plug is designed to cover 900' - 0'. Collect wet and dry samples of cement to be left on rig. Notify engineering if circulation is ever lost during the job.
30. 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.
31. 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.
32. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
33. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
34. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
35. Welder cut casing minimum 5' below ground level.
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.