Engineer: Clark Martin
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PLUG and ABANDONMENT PROCEDURE

MLEYNEK 28-10M

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 12/03/14. RDMO Slickline.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. "Verify COAs before RU. Verify Form 17 (State Bradenhead Test) has been run within 60 days of RU.
   Note: 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 and Engineer to confirm proceeding after pressure test."
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. Spot a min of 16 jts of 2-3/8", 4.7#, J-55, EUE tbg. Kill well as necessary using biocide treated fresh water. Verifty BOP and wellhead rating, inspect for appropriate API standards, pressure test BOP according to VWP BOP testing guidelines. ND WH. NU BOP. Unland tbg using unlanding joint and LD.
7. TOOH and SB all 2-3/8" tbg.
8. PU and TIH with (4-1/2", 11.6#) Bit and Scraper on 2-3/8" tbg to 8000'. TOOH and SB 7560' of 2-3/8" tbg. LD remaining tbg and Bit and Scraper.
9. MIRU WL. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7990' (collars at 7960' & 8004'). POOH. RIH and dump 2 sx cement on CIBP. POOH.
10. PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7560' (collars at 7534' & 7576'). POOH. RDMO WL.
11. Run CCL/GR/CBL/VDL log from +/- 7560' to surface to confirm squeeze location. Run one pass at 500 psi on casing. Current CBL squeeze location is '.
12. 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. May also run packer to test injection first.
13. TIH with 2-3/8" tbg to 7560’
14. Load hole with biocide treated fresh water and circulate all gas out of well. PT CIBP to 1000 psi for 15 minutes.
15. MIRU Cementers. Pump Niobrara Balance Plug: Pump 35 sx (9.6 bbl or 54 cf) Class G Cement, assuming 15.8 ppg & 1.53 cf/sk. Volume based on 555’ inside 4-1/2", 11.6# production casing with no excess. Cement will be from 7560'-7005'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers.
16. Pull out of cement at a rate of 1 jt/min. TOOH, SB 4290' 2-3/8" tbg. LD remaining tbg.
17. MIRU WL. 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 4640' and 4' of squeeze holes at 4230'. RDMO WL.
18. PU and TIH with (4-1/2", 11.6#) packer on 2-3/8" tbg. Set packer at 4290'.
19. Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole. Max pump pressure is 985 psi with fresh water at 2 bpm. If unable to circulate at that pressure, contact engineer.
20. Release packer. TOOH, SB 2-3/8" tbg. LD packer.
21. PU and TIH with (4-1/2", 11.6#) CICR on 2-3/8" tbg. Set CICR at 4290'.
22. MIRU cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump Sussex Squeeze: 110 sx (35.1 bbl or 197 cf), assuming 12 ppg & 1.79 cf/sk. Max pump pressure is to be 816 psi at 2 bpm with a full column of cement. Underdisplace by 3 bbls. Volume is based on 350' below the CICR inside 4-1/2", 11.6#

production casing with no excess, 410' in the 4-1/2", 11.6# annulus assuming 7.875" bit size with 60% excess and 190' on top of the CICR to cover top perfs. Collect wet and dry samples of cement to be left on rig. RDMO Cementers.

23. Pull out of cement at a rate of 1 jt/min. TOOH to 3600'. Reverse circulate to ensure no cement is left in the tbg.
24. TOOH and SB 2600' of 2-3/8" tbg. LD stinger, and remaining tbg.
25. MIRU WL. RIH and jet cut 4-1/2", 11.6# casing at 2500'. RDMO WL.
26. Attempt to establish circulation and circulate (64 bbl) with fresh water containing biocide to remove any gas.
27. 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.
28. Install BOP on casing head with 4-1/2", 11.6# pipe rams.
29. TOOH and LD all 4-1/2", 11.6# casing. Remove 4-1/2", 11.6# pipe rams and install 2-3/8" pipe rams.
30. TIH with mule shoe and 2-3/8" tubing to 2600'.
31. Establish circulation to surface with biocide treated fresh water and pump at least two hole-volumes (128 bbl) to circulate all gas out of the well. Contact engineering if evidence of gas migration persists.
32. MIRU cementers. Pump Upper Pierre Plug: Pump 50 sx (13.9 bbl or 78 cf), assuming 14 ppg & 1.55 cf/sk. Volume based on 100' inside 4-1/2", 11.6# production casing with no excess. 100' in 7.875" bit size open hole with 100% excess factor. Cement will be from 2600'-2400'.
33. Pull out of cement at a rate of 1 jt/min. TOOH to 780', LD 2-3/8" tubing.
34. Pump Stub Plug: Pump 160 sx (44.2 bbl or 248 cf), assuming 14 ppg & 1.55 cf/sk. Volume is based on 252' in 7.875" bit size open hole with 100% excess factor. 203' in the 8-5/8", 24# surface casing with no excess. The plug is designed to cover 780'-325'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers. Notify engineering if circulation is ever lost during job.
35. Pull out of cement at a rate of 1 jt/min. TOOH to 150'. Reverse circulate using biocide treated fresh water to ensure the tubing is clean. TOOH, SB 430' 2-3/8" tbg. WOC.
36. TIH with mule shoe on 2-3/8" tbg and tag cement to verify appropriate coverage above the surface casing shoe. Pressure test casing to 500 psi and hold for 15 minutes. TOOH to 150', LD 2-3/8" tbg.
37. MIRU Cementers. Pump Surface Plug: Pump 50 sx (10.3 bbl or 58 cf) Class G cement, assuming 15.8 ppg & 1.15 cf/sk. Volume based on 150' inside 8-5/8", 24# surface casing with no excess. Cement will be from 150' to surface. Verify and document cement to surface. Collect wet and dry samples of cement to be left on rig. RDMO Cementers.
38. Pull out of cement at a rate of 1 jt/min. TOOH, LD all 2-3/8" tbg. Tag cement as needed to verify cement to surface. RDMO WO rig.
39. 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.
40. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
41. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
42. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
43. Welder cut casing minimum 5' below ground level.
44. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
45. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
46. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
47. Back fill hole with fill. Clean location, and level.
48. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.