

PLUG and ABANDONMENT PROCEDURE

Scheidt State VV 16-12

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. Pull bumper spring and tag bottom. Record tag depth in Open Wells. RDMO Slickline. |
| 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. |
| 6. | <u>Be prepared to spot in 25 jts of 2-1/16" tbg.</u> |
| 7. | Kill well as necessary using biocide treated fresh water. ND WH. NU BOP. Be sure to have rams for 2-1/16" tubing. |
| 8. | Load 7-7/8 x 3-1/2 with biocide treated water to try to help re-hydrate mud to make cutting and pulling casing easier later in the job. |
| 9. | PU and TIH w/ (3-1/2", 9.3#) bit and scraper to 7320'. TOO H. |
| 10. | MIRU WL. PIRIH w/ (3-1/2", 9.3#) CIBP on WL and set at 7300'. POOH. RDMO WL |
| 11. | TIH with 2-1/16" tbg to 7300'. Load hole with biocide treated water and circulate all gas out of hole. PT csg and CIBP to 1000psi. |
| 12. | <u>MIRU Cementers. Niobrara/Codell Balance Plug:</u> Pump 15 sxs (62 cf) 15.8 ppg & 1.53 cf/sk. Volume based on 400' inside 3-1/2" production casing with no excess. Cement will be from 7300' – 6900'. RD Cementers. |
| 13. | Slowly pull out of the cement and PUH to 6400'. Reverse circulate tbg clean to ensure no cement is left in the tbg. |
| 14. | Circulate wellbore volume to ensure no gas in hole. |
| 15. | TOOH and lay down all 2-1/16" tbg. |
| 16. | ND BOP. ND TH. |
| 17. | Make up BOP to 8-5/8" head. Make sure to have 3-1/2" pipe rams. |
| 18. | MIRU WL. RIH and jet cut 3-1/2" casing at 4550'. RDMO WL. |
| 19. | 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. | Pull casing up to 4450'. If pipe movement free, record weight at rig to verify 4450' of 3-1/2 9.3# pipe (string weight of ~41,385). If weight not correct, contact Engineering. |
| 21. | If weight correct, CIH to 4550. |
| 22. | Attempt to circulate with biocide treated fresh water to remove any gas. |
| 23. | <u>MIRU Cementers. Sussex Balance Plug:</u> Pump 80sx 15.8 ppg & 1.51 cf/sk. Volume based on 150' inside 7-7/8 OH with 60% excess. |
| 24. | PUH to 3500 and reverse circulate with biocide treated fresh water down tubing to clean tubing of cement. |
| 25. | COOH, SB 1370'. Lay down remainder. WOC per cement company recommendation. |

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26. MIRU SL. RIH to tag cement plug at 4400. If tag low, contact engineering.
27. TIH with 3-1/2" 9.3# N-80 to 1560'
28. Establish circulation with biocide treated fresh water and pump one hole volume (100 bbls).
29. RU Cementers. **Pump FH Balanced Plug:** Pump 10 bbls (min) SAPP and 5 bbls fresh water spacer followed by 410 sx (555 cf) .25lb/sk polyflake, 15.8 ppg, & 1.5 cf/sk. Volume is based on 798' in 7-7/8" bit size OH with 100% excess, and 200' in 8-5/8" surface casing with no excess. The plug will cover 1560' – 562'. RDMO Cementers.
30. 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.
31. MIRU WL. RIH and tag cement. Cement top needs to be at or above 712' (50' above surface casing shoe at 762). Call Engineering if tag is lower than 712'. POOH.
32. RIH (8-5/8", 24#) CIBP to 80'. RDMO WL and WO rig.
33. 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.
34. Supervisor submit paper copies of all invoices, logs, and reports to Platteville Engineering Specialist.
35. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
36. 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.
37. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
38. Welder cut casing minimum 5' below ground level.
39. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
40. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
41. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
42. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
43. Back fill hole with fill. Clean location, and level.
44. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.