

PLUG and ABANDONMENT PROCEDURE

BADDING USX W 25-1

Notes: In 2005 set Composite Flow Through Plug at 7792'. Casing collars are 40'. Marker joint at 7435'.

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 VES. WELL NEEDS GYRO RUN. Run gyro to 7374', making stops every 100'. RDMO Slickline and VES. 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. Spot a min of 25 jts of 2-3/8" 4.7# J-55 EUE tbgs. Kill well as necessary using biocide treated fresh water. ND WH. NU BOP. Unland tbgs using unlanding joint and LD.
6. TOO and SB all 2-3/8" tbgs.
7. PU and TIH with bit and casing scraper for 5 1/2" 17#. Tally in to 7810'. If tag high, contact engineer. LD bit and scraper
8. MIRU WL. PIRIH w/ (5-1/2", 17#) CIBP on WL and set at 7790' (Last collar logged at 7670'). POOH.
9. Dump bail 3 sxs of 15.8ppg Class G neat (35').
10. PIRIH w/ (5-1/2", 17#) CIBP on WL and set at 7168' (collar at 7150'). POOH. RDMO WL.
11. TIH with 2-3/8" tbgs to 7168'. Load hole with biocide treated water and circulate all gas out of hole. PT csg and CIBP to 1000psi.
12. MIRU Cementers. Niobrara/Codell Balance Plug: Pump 40 sxs (61.2 cf, 10.9bbl) 15.8 ppg & 1.53 cf/sk. Volume based on 468' + inside 5-1/2" production casing with no excess. Cement will be from 7168' – 6700'. RD Cementers.
13. Slowly pull out of the cement and PUH to 6000'. Reverse circulate tbgs clean to ensure no cement is left in the tbgs.
14. TOO and SB 2200' 2-3/8" tbgs, LD remaining tbgs.
15. MIRU WL. PIRIH w/ (5-1/2", 17#) CIBP on WL and set at 4240' (collar at 4227'). POOH.
16. RIH and dump bail 3 sxs on top of CIBP at 4240'. POOH.
17. 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 2500' and 4' of squeeze holes at 2100'. RDMO WL.
18. PU and TIH with (5-1/2", 17#) CICR on 2-3/8" tbgs. Set CICR at 2130'.
19. Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole.
20. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water spacer. Pump **GAS BLOK Sussex Squeeze:** 165 sx (34 bbl or 190 cf) assuming 12 ppg & 1.16 cf/sk. Slurry could be different yield – confirm yield and volume before pumping. Confirm job pressure with engineer. Under displace by 5 bbls. Volume is based on 370' below the CICR inside 5-

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- 1/2", 17# production casing with no excess, 400' in the 5-1/2", 17# annulus assuming 7.88" bit size with 60% excess and 215' on top of the CIRC to cover top perms. RD Cementers.
21. Slowly pull out of the cement and TOOH to 1400'. Reverse circulate to ensure no cement is left in the tbg.
 22. After pumping the squeeze at 2130', SD and WOC at minimum 4 hrs; verify gas migration has been eliminated. If evidence of gas migration or pressure remains, contact engineer.
 23. TOOH and SB 1700' of 2-3/8" tbg. LD stinger, and remaining tbg.
 24. RIH and jet cut 5-1/2" casing at 1565'. RDMO WL.
 25. Attempt to circulate with biocide treated fresh water to remove any gas.
 26. 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.
 27. Install BOP on casing head with 5-1/2" pipe rams.
 28. TOOH and LD all 5-1/2" casing. Remove 5-1/2" pipe rams and install 2-3/8" pipe rams.
 29. TIH with 2-3/8" tbg to 1665'.
 30. Establish circulation with biocide treated fresh water and pump at least one hole volume (150 bbls). Call engineer if any gas is present. Contingency if gas is present is to split stub plug into two stages to shut off gas (100' in 5.5" and 200' in OH for the first stage).
 31. RU Cementers. **Pump GAS BLOK Stub Plug:** Pump 10 bbls (min) SAPP and 5 bbls fresh water spacer followed by 375 sx (431 cf, 76.8 bbl) 14.0 ppg, & 1.15 cf/sk cement. Volume is based on 100' in 5-1/2" production casing with no excess, 465' in 7-7/8" bit size OH with 100% excess, and 200' in 9-5/8" surface casing with no excess. The plug will cover 1665 – 900'. RDMO Cementers.
 32. Slowly pull out of the cement and TOH. Reverse circulate using biocide treated fresh water to ensure the tbg is clean. WOC per cement company recommendation.
 33. MIRU WL. RIH and tag cement. Cement top needs to be at or above 1050' (50' above surface casing shoe at 1100'). Call Engineering if tag is lower than 1050'. POOH.
 34. Pump pressure test to test casing. Test shall be 500psi for 15mins. If well fails pressure test PU TIH with (9-5/8", 36#) packer and set just above cement top. Re-test casing. If casing still fails test, contact engineering.
 35. RIH (9-5/8", 36#) CIBP to 80'. RDMO WL and WO rig.
 36. 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.
 37. Supervisor submit paper copies of all invoices, logs, and reports to Platteville Engineering Specialist.
 38. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
 39. Capping crew will set and secure night cap on 9 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.
 40. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
 41. Welder cut casing minimum 5' below ground level.

Engineer: Chris Cordaro

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42. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
43. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
44. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
45. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
46. Back fill hole with fill. Clean location, and level.
47. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.