

## PSC 22-9

## PLUG AND ABANDON PROCEDURE

1. Provide 48 hr notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Call IOC (970-506-5980) at least 24 hr prior to rig move. Request they catch and remove plunger, isolate production equipment and remove any automation prior to rig MIRU.
2. MIRU slickline services. Pull bumper spring and tag bottom. RDMO slickline services.
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.
5. MIRU WO rig. Kill well as necessary w/ water containing biocide. ND WH, NU BOP.
6. PU the 2-1/16" tbg (3.25#, J-55) to break any sand bridges. Do not exceed the safety tensile load of 39,256 lbs (80% of upset yield strength).
7. TOOH. SB +/- 6,800' of tbg, LD the remainder.
8. MIRU Wireline. PU gauge ring for 3-1/2", 7.7# csg on wireline and RIH to +/- 6,770'. POOH and LD gauge ring.
9. PU CIBP for 3-1/2" csg (7.7#, WC-70, 10 RD IJ). RIH and set CIBP at 6,750' (Note: Collars are at 6,732' & 6,770'). POOH and LD the setting tool. Pressure test CIBP to 1000 psi for 15 min. RDMO Wireline.
10. TIH 2-1/16" tbg and tag the CIBP (at +/- 6,750') while hydrotesting each stand to +/- 3000 psi. PU 5' from tag.
11. MIRU Cementing Services. Spot 25 sx (+/- 34 cuft) of cmt (Class G w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301, and R-3 to achieve 2:30 pump time) mixed at 15.8 ppg and 1.38 cuft/sk from 6,750' to 6,400' on top of CIBP.
12. PUH w/ 2-1/16" tbg to +/- 6,300' (+/- 14 jts) and circulate tbg clean. POOH, SB +/- 3,770' of tbg, LD remainder.
13. MIRU Wireline. PU and RIH one 1' perf gun (2-1/2", 6 spf, 0.49" EHD, 7" penetration, 60° phasing, 1' net, 6 total holes) to 4,200'. Perf squeeze holes at 4,200' in 3-1/2" prod csg. POOH and LD perf gun. RDMO wireline.
14. MIRU Cementing Services. Pump down the 3-1/2" csg w/ 5 bbls of fresh water, 20 bbls of metalillicate, and 5 bbls of fresh water followed with 310 sx (+/- 356 cuft) of cmt (Class G w/ 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301) mixed at 15.8 ppg and 1.15 cuft/sk. Drop a wiper plug and displace to 3,700' w/ 34 bbls of water containing biocide. Planned cement is from 4,200' to 3,700' in 11" OH (plus 20% excess) & from 4,200' to 3,700' in 3-1/2", 7.7# csg. RDMO Cementing Services. WOC for 4 hrs.
15. RIH w/ 2-1/16" tbg and tag TOC at +/- 3,700'. TOOH and SB +/- 850' of tbg, LD the remainder.
16. MIRU wireline. PU a jet cutter and RIH to +/- 750' to cut 3-1/2" csg. Cut csg and circulate bottoms up. Continue to circulate to remove any gas from the wellbore. RDMO wireline.
17. ND BOP and tbg head. NU BOP of the surface csg head w/ 3-1/2" pipe rams. Install 3,000 psi rated ball valves on both surface csg outlets. Install a choke or a choke manifold on one of the outlets.
18. TOOH and LD 3-1/2" csg.
19. Remove the 3-1/2" pipe rams and install 2-1/16" pipe rams on the BOP.

20. TIH w/ 2-1/16" tbg to +/- 850', 100' past the csg stub.
21. MIRU Cementing Services. Pump 10 bbls of SAPP (Sodium Acid Pyrophosphate) followed by 20 bbls of fresh water containing biocide. Spot 430 sx (+/- 572 cuft) of cmt (Type III w/ cello flake and CaCl<sub>2</sub> as deemed necessary) mixed at 14.8 ppg at 1.33 cuft/sk. Planned cement is from 850' to 750' in 11" OH/3-1/2" csg annulus (from closest caliper reading, plus 40% excess); 750' to 370' in 11" OH (from closest caliper reading, plus 40% excess), and from 370' to 170' inside 8-5/8", 24# surface csg. PUH to 100' and circulate tbg clean. RDMO Cementing Services. WOC for 4 hrs.
22. TIH w/ 2-1/16" tbg and tag TOC and if TOC is deeper than 170' contact engineer for possible further cement work. TOOH and LD 2-1/16" tbg.
23. MIRU wireline. PU CIBP on wireline for 8-5/8" (24#) csg and TIH to +/- 80'. Set CIBP and test to 1000 psi for 15 min. POOH and LD wireline. RDMO wireline.
24. RDMO WO rig.
25. NOTE: Instruct cementing & wireline contractors to email copies of all job logs/job summaries & invoices to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com) within 24 hours of the completion of the job.
26. Wellsite supervisor should turn all paper copies of cementing reports/invoices and logs into Joleen Kramer.
27. Have excavation contractor notify One-Call to clear for digging around wellhead and flowline removal.
28. Excavate hole around surface casing enough to allow welder to cut 8-5/8" casing minimum 5' below ground level.
29. Welder cut 8-5/8" casing minimum 5' below ground level.
30. MIRU ready cement mixer. Fill the last 80' inside the 8-5/8" prod. casing until 10' below surface. Use 4,500 psi compressive strength redi-mix cement (Sand and Cement only, no gravel) to finish filling surface casing to top of cut off.
31. Have welder spot weld on steel marker plate. (Note: marker shall be labeled with well name and number, legal location (¼ ¼ description) and API number.
32. Properly abandon flowlines as per rule 1103.
33. Have excavation contractor back fill hole with native material. Clean up location and have leveled to plant any vegetation required.
34. Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.

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