

## UPRR 22 PAN AM D 1

## 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. Unseat and LD landing joint. PU w/ 2-3/8" tbg (4.7#, J-55, 8rd EUE) to break any sand bridges. Do not exceed the safety tensile load of 57,384 lbs (80% of upset yield strength).
7. TOO H and SB 2-3/8" tbg (236 jts landed at 7,777').
8. PU scraper for 4-1/2", 11.6#, ST&C csg. TIH to +/- 7,750' (+/- 250 jts). TOO H and SB tbg.
9. MIRU Wireline. PU CIBP for 4-1/2" (11.6#, ST&C) csg on wireline and RIH to 7,730'. Set CIBP in the csg at 7,730' and dump 2 sx of Class G cement on top of the CIBP. POOH wireline.
10. PU CIBP for 4-1/2" (11.6#, ST&C) csg on wireline and RIH to 7,250 (collars at 7,262' and 7,229'). Set CIBP in csg at 7,250' and POOH wireline. Pressure test to 1000 psi for 15 min.
11. PU CCL-CBL on wireline and run from CIBP (+/- 7,250') to surface. LD CCL-CBL tool. Notify engineer of the CBL results. RDMO wireline. NOTE: multiple sqzs were done @ 5,125', 6,390' and 7,140'. NOTE: Ensure hole is full. Might need to circulate gas out of the hole above the CIBP.
12. TIH 2-3/8" tbg to +/- 7,250' (+/- 234 jts) while hydrotesting each joint to +/- 3000 psi and tag CIBP. Pick up 5' from tag.
13. MIRU Cementing Services. Spot 40 sx (+/- 55 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 7,250' to 6,630'. RDMO Cementing Services.
14. PUH w/ 2-3/8" tbg to +/- 6,000' (+/- 42 jts) and circulate tbg clean. POOH, SB 138 jts of tbg, LD remainder.
15. MIRU Wireline. PU and RIH on wireline two 1' perf guns (3-1/8", 3 spf, "Big Hole" 0.6" EHD, 7" penetration, 120° phasing, 2' net, 6 total holes) to 4,630'. Perf bottom squeeze holes at 4,630' then PUH to 4,230' and perf top squeeze holes in 4-1/2" prod csg. POOH perf guns. RDMO wireline.
16. PU CICR for 4-1/2" csg (11.6#, ST&C) on 2-3/8" tbg. TIH and set at +/- 4,260' (+/- 137 jts).
17. MIRU Cementing Services. Pump 5 bbls of fresh water, 20 bbls of metalillicate, and 5 bbls of fresh water followed with 280 sx (+/- 322 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. Under displace by 3bbls of cement, sting out of CICR and dump cmt on CICR. Planned cement is from 4,630' to 4,230' in 10-1/2" OH (plus 40% excess) & from 4,630' to 4,130' in 4-1/2", 11.6# csg. PUH to +/- 3,580 (+/- 22 jts) and circulate to clean tbg. TOO H and SB 42 jts of tbg and LD remainder. RDMO Cementing Services.
18. MIRU Wireline. PU a jet cutter and RIH to 1,160' to cut 4-1/2" csg. Cut csg and circulate bottoms up. Continue to circulate to remove any gas in the wellbore. RDMO Wireline.

19. ND BOP and tbg head. NU BOP on the surface csg with 4-1/2" pipe rams. Install 3,000 psi ball valves on the csg head outlets. Install a choke or a choke manifold on one outlet.
20. TOO H and LD 4-1/2" csg. If unable to pull csg, contact the Engineer and notify COGCC.
21. Remove the 4-1/2" pipe rams and install 2-3/8" pipe rams on the BOP.
22. TIH w/ 2-3/8" tbg to +/- 1,260' (+/- 40 jts) so EOT is 100' in csg stub.
23. MIRU Cementing Services. Pump 10 bbls of SAPP (Sodium Acid Pyrophosphate) followed by 20 bbls of fresh water containing biocide prior to pumping cement. Spot 480 sx (+/- 638 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 1,260' to 1,160' stub plug in 4-1/2", 11.6# csg stub, 1,160' to 504' in 10-1/2" OH (plus 40% excess), and from 504' to 300' inside 8-5/8", 24# surface csg. PUH to 150' and circulate tbg clean, POOH and SB tbg. RDMO Cementing Services. WOC for 4 hrs.
24. Tag TOC and if TOC is deeper than 304' contact engineer for possible further cement work. TOO H and LD 2-3/8" tbg.
25. 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.
26. RDMO WO rig.
27. 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.
28. Wellsite supervisor should turn all paper copies of cementing reports/invoices and logs into Joleen Kramer.
29. Have excavation contractor notify One-Call to clear for digging around wellhead and flowline removal.
30. Excavate hole around surface casing enough to allow welder to cut 8-5/8" casing minimum 5' below ground level.
31. Welder cut 8-5/8" casing minimum 5' below ground level.
32. 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.
33. 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.
34. Properly abandon flowlines as per rule 1103.
35. Have excavation contractor back fill hole with native material. Clean up location and have leveled to plant any vegetation required.
36. Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.

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