

PLUG AND ABANDONMENT PROCEDURE

Thomason X 16-13 | API: 05-123-17206

1. Note: Production Casing = 2 7/8" OD, 6.5#/ft, J-55 (may be varied weights of pipe installed)
2. Note: No tubing in hole. Order 7200' of work string = 1.66" OD, 2.33#/ft, J-55 Integral Joint.
3. Note: RBP set at 7137' with 2 sks of sand on top.
4. Note: Known casing leak exists, but the depth is unknown.
5. Provide 48 hr notice to COGCC prior to rig up per request on approved Form 6 (e.g. call automation removal group, submit Form 42, etc.).
6. MIRU slickline. Have slickline tag bottom to confirm placement of RBP/top of sand.
7. Prepare location for base beam equipped rig. Install perimeter fence as needed.
8. Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
9. **Notify Evans engineering if any Bradenhead pressure exists that does not blow down to 0 or stay at 0.
10. MIRU, kill as necessary using clean fresh water with biocide. ND WH. NU BOP.
11. RIH with packer for 2-7/8" on 1.66" OD tubing to 6500' to locate leak. Set packer at 6500' and test down tubing to 1000 psi to confirm positive seal of RBP. If positive test obtained begin moving up the hole to locate leak.
12. When leak is located contact engineering with depth and confirm the plan moving forward. If leak is found to be deeper than 4720' the following steps will be altered. POOH SB
13. RIH with 1.66" OD tubing while hydro-testing to 3000 psi down to RBP at 7137' or at the slickline tag depth just above the RBP.
14. MIRU cementers.
15. Establish circulation and pump 15 sks (30 cuft) of Thermal 35 + 0.3% CFR-2 + 0.3% ASM-3 (AS-3) mixed at 15.6 ppg and 1.51 cuft/sk (7137'-6300' inside 2 7/8", 6.5# casing, no excess).
16. PUH to 6000' and circulate clean.
17. POOH LD 1.66" OD tubing.
18. MIRU wireline. RIH and cut csg at 4720'. Unland and POOH with 2-7/8" casing string. Remove hole and the lower cut. TIH back to 4720' while hydrotesting to 3000 psi.
19. Establish circulation with fresh water and biocide and circulate until clean. If unable to establish circulation to surface with good rate, contact engineer to discuss.
20. MIRU Cementers. Precede cement with 20 bbl of SMS and a 10 bbl fresh water spacer immediately preceding cement.
21. Establish circulation and pump 280 sks (322 cuft) of 0:1:0 'G' + 0.5% CFR-2 + 0.2% FMC + 0.5% LWA mixed at 15.8 ppg and 1.15 cuft/sk (4720' to 4130' in 9" borehole diameter with 20% excess).
22. PUH to 3600', circulate clean and WOC 4 hours or recommended time by cementing services.
23. RIH and tag TOC. If TOC is below 4130' contact engineering.
24. PUH to 1500'
25. Circulate water containing biocide down casing and up annulus to remove any gas. Be sure to circulate bottoms up until there is no pressure, gas, or condensate remaining.

26. MIRU Cementers. Establish circulation, circulate bottoms up and pump 10 bbl SAPP with a minimum of 20 bbl fresh water spacer. Pump Balanced Plug down 2 7/8" casing: 410 sks (545 cuft) of Type III + 0.3% CFL-3 + 0.3% CFR-2 + 0.5% CaCl₂ + 0.25 lb/sk Polyflake, mixed at 14.8 ppg and 1.33 cuft/sk (681' inside 19" OH + 40% excess, and 200' inside 8-5/8" surface casing).
27. PUH to 500'. Circulate with water containing biocide to clean tubing until clear.
28. TOO. WOC 4 hrs. Tag Cement with tbg. If cement top is at or above 620' proceed to next step, otherwise, call Evans engineering. TOO and LD all tbg on trailer.
29. MIRU WL. RIH with 8-5/8" CIBP to 80', set, PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
30. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries and invoices to rscDJVendors@anadarko.com within 24 hrs of the completion of the job.
31. Supervisor submit paper copies of all invoices, logs, and reports to Evans specialist.
32. Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
33. Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
34. Welder cut 8 5/8" casing minimum 5' below ground level.
35. MIRU ready cement mixer. Use 4500 psi compressive strength cement, (NO gravel) fill stubout.
36. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
37. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
38. Properly abandon flowlines per Rule 1103.
39. Back fill hole with fill. Clean location, level.
40. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.