

PLUG AND ABANDONMENT PROCEDURE

1415 Corporation D GU 1

1. Note: Production Casing = 4-1/2" OD, 10.5#/ft and 11.6#/ft; Production Hole Drilled @ 7-7/8".
2. 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 Foreman or Field Coordinator 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.
3. MIRU slickline services. Pull bumper spring and tag bottom. RDMO slickline services.
4. Prepare location for base beam equipped rig. Install perimeter fence as needed.
5. Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
6. MIRU, kill well as necessary using clean fresh water with biocide and circulate. ND WH. NU and function test BOP. Unseat landing jt, LD.
7. Notify cementers to be on call. Provide volumes listed below:
 - 7.1 Niobrara Plug: 69 cu ft/50 sx class G w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 mixed at 15.8 ppg and 1.38 cuft/sk (770' inside 4-1/2" casing, no excess)
 - 7.2 SX suicide: 552 cu ft/480 sx class "G" w/ 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx (780' inside 4-1/2" casing and 600' between open hole and 4-1/2" casing with 20% excess). 12" open hole from 4200' to 4540', 16" open hole from 4540' to 4580', and 11" open hole from 4580' to 4800'.
 - 7.3 Stub Plug: 798 cu ft/600 sx Type III w/0.25 pps cello flake and CaCl₂ as necessary, mixed at 14.8 ppg and 1.33 cf/sx (100' in 4-1/2" prod casing, 643' in 12" OH + 40% excess, and 207' in 8 5/8" surface casing).
8. TOOH 240 joints of 2-3/8" tubing landed at 7882'. Stand back tubing.
9. PU scraper for 4-1/2" 11.6# casing and RIH on 2-3/8" tubing to 7900'. TOOH and LD scraper.
10. MIRU WL. RIH CIBP w/ wireline and set at +/- 7850' to abandon J Sand perfs.
11. PU dump bailer and spot 2 sx class "G" cement on CIBP at 7850'.
12. RIH CIBP w/ wireline and set at +/- 7400'. RD WL. Pressure test CIBP to 1000 psi.
13. RIH open ended 2-3/8" tubing to 7400' while hydrotesting to 3000 psi.
14. RU Cementers. Pump Niobrara Plug: 69 cu ft/50 sx class G w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 mixed at 15.8 ppg and 1.38 cuft/sk to place cement in 4-1/2" production casing from 7400' to 6630'.
15. PUH to 6300'. Circulate 60 bbls water containing biocide to clear tubing and cement.
16. P&SB 4230' of tbg, LD remainder.
17. PU two 3-1/8" perf guns, with 3 spf, 120 degree phasing and 0.59" EHD and RIH w/ wireline. Shoot 1' of squeeze holes at 4800' and 4200'. RD WL.
18. PU CICR on 2-3/8" tubing. RIH and set CICR at 4230'. Establish circulation with fresh water containing biocide.

19. RU Cementers. Pump SX suicide: 552 cu ft/480 sx class "G" w/ 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301, mixed at 15.8 ppg and 1.15 cf/sx to place cement between perms from 4800' to 4200'. Under displace and sting out of CICR to leave 3 bbls on top of retainer. Plug to cover from 4800' to 4020' inside 4-1/2" casing and from 4800' to 4200' between open hole and 4-1/2" casing with 20% excess. 12" open hole from 4200' to 4540', 16" open hole from 4540' to 4580', and 11" from 4580' to 4800'
20. PUH to 3500'. Circulate 40 bbls water containing biocide to clear tubing and cement.
21. TOOH and LD all but 1380' of tbg.
22. RU WL. Shoot off casing at or below 1280'. RD WL. Circulate water containing biocide to remove any gas.
23. NDBOP, NDTH.
24. Install BOP on casing head with 4-1/2" pipe rams.
25. TOOH with 4-1/2" casing, LD.
26. RIH with 2-3/8" tubing to 1380'.
27. RU Cementers. Pump 10 bbl SAPP with a minimum of 20 bbl fresh water spacer. Spot Stub Plug: 798 cu ft/600 sx Type III w/0.25 pps cello flake mixed and CaCl₂ as necessary, at 14.8 ppg and 1.33 cf/sx from 1380' to 430'.
28. PUH to 200' and circulate 35 bbls water containing biocide to clear tubing.
29. TOOH. WOC 4 hrs. Tag Cement. Cement top needs to be above 430'; Proceed assuming TOC is above 430'. Otherwise, call engineer.
30. MIRU WL. RIH 8-5/8" CIBP to 80'. Set and PT to 1000 psi for 15 min. If test holds, RDMO WL and WO rig.
31. 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.
32. Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
33. Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
34. Excavate hole around surface casing enough to allow welder to cut 8-5/8" casing minimum 5' below ground level.
35. Welder cut 8-5/8" casing minimum 5' below ground level.
36. MIRU ready cement mixer. Use 4500 psi compressive strength cement, (NO gravel) fill stubout.
37. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
38. Properly abandon flowlines per Rule 1103.
39. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
40. Back fill hole with fill. Clean location, level.
41. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.