

## BETZ 2

1. Call Foreman or Lead Operator at least 24 hr prior to rig move. Request that they catch and remove plunger, isolate production equipment and remove any automation equipment prior to the rig showing up. Install perimeter fence as needed.
2. MIRU slickline services. Pull bumper spring, tag bottom. RU VES and run gyro survey on slickline (from 7000' to surface with stops every 100'). Forward gyro survey data to Sabrina Frantz and invoices to John Tonello. RDMO slickline services (and VES).
3. Provide notice of MIRU to COGCC field inspector as specified in approved Form 6.
4. Notify CDC when rig moves on location to generate workorder for flowline removal and one call for line locates.
5. Prepare location for base beam rig.
6. MIRU WO rig. Kill well using water and biocide. ND wellhead. NU BOP.
7. PUH w/ tbg to break any sand bridges, noting not to exceed the safety tensile load of 2-3/8", 4.7# tbg of 57,3847 lbs. (80% of upset joint yield strength).
8. TOO H with 2-3/8" tbg and stand back.
9. MIRU WL. RIH with Junk Basket/Gauge Ring on WL to  $\pm 6750'$ . TOO H with Junk Basket/Gauge Ring.
10. PU and RIH with CIBP for 4-1/2", 11.6#, J-55 production casing. Set CIBP at  $6702'$  (60' above CN perfs). POOH. Pressure test CIBP to 1000 psi for 15 min. Dump bail 2sx of cement on top of CIBP. RDMO WL.
11. Run tbg to spot a 350' long balanced plug from  $6702'$ - $6350'$ .
12. MIRU Cementing services. Pump 50 sx of cement (50/50 poz Class G w/ 20% Silica four, 0.4% CD-32, 0.4% ASA-301 and R-3 mixed at 15.8 ppg and 1.38 cuft/sx) on CIBP to reach an estimate TOC @  $6350'$  inside 4-1/2" production casing. Pull 2 stand tbg and circulate hole with min 9.0 ppg drilling mud (200 bbls, 1.5 volume of hole). Circulate to get any cement out of the hole. P & SB tubing for next depth ( $5600'$ ), LD remainder. RD cementer.
13. MIRU WL. PU and RIH with CCL and 3-1/8" perf gun and perforate casing at  $5600'$  (200' below base of Shannon) with 3 spf, 0.38" EHD, 33.65" penetration, 120 deg phasing, 1' net, 3 shot total.
14. PUH and perf casing at  $3990'$  (230' above top of Sx) with 3 spf, 0.50" EHD, >6.0" penetration, 120 deg phasing, 1' net, 3 shot total. POOH with CCL and perf guns and RDMO WL.
15. PU and RIH with 4.5" CIGR on setting tool and 2-3/8" tubing to set CIGR at  $4020'$  (30' below top perfs) in 4-1/2" casing. Set CIGR and establish circulation through squeeze holes at  $3990'$  and  $5600'$  and note returns in OpenWells report.
16. RU cementer. Once pumping rate has been established, pump 5 bbl water, followed by 20 bbl Sodium Metasilicate ahead of cement, followed by 5 bbl water. Pump  $1000\text{sx}$  of cement ("G" w/ 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-30) from  $3990'$  and  $5600'$ . Sting out of retainer and dump 2 sx cement on top of retainer. Note returns during cement job in OpenWells report.
17. PUH to  $3690'$  (300' above estimated top of cement) with 2-3/8" tubing and circulate conventionally with drilling mud until no cement returns to surface.

18. P & SB tubing for next depth (600'), LD remainder. Circulate wellbore with drilling mud. RD cementer.
19. MIRU WL. TIH with jet cutter and cut casing at the "closest joint" to 500' (150' below bottom of Surface casing). RDMO WL.
20. ND BOP & tbg head.
21. NU BOP w/ 4-1/2" pipe rams on the 8-5/8" csg head.
22. PU csg. Circulate wellbore with drilling mud. TOOH and LD 4-1/2" csg. If unable to pull production csg contact engineer/COGCC for plugging modification.
23. TIH with tbg open ended to land EOT 600' below production casing stub at 500'.
24. MIRU cementer. Spot 250 sx of cement (Type III w/ CaCl<sub>2</sub>) from 600' in the 4-1/2" stub to at least 100' inside the surface casing ( plug from 600'-100'). TOOH w/ tubing and stand back 100' tbg in derrick. RDMO Cementer.
25. WOC 4 hours or overnight.
26. TIH with tbg and tag cement plug. Record tagging plug in Openwells report. Lay down all tbg.
27. RU WL. Set 8-5/8" CIBP above cement top at approximately 100'. Pressure test CIBP to 1000 psi for 15 min.
28. RDMO WO rig.
29. Wellsite supervisor turn all paper copies of cementing reports/invoices and logs in to Sabrina Frantz.
30. NOTE: During the job, wellsite supervisor should instruct the logging and cementing contractors to e-mail all logs, job reports/invoices to Sabrina Frantz.
31. Have excavation contractor notify One-Call to clear for digging around wellhead and flowline removal.
32. Check top of cement inside 8-5/8" surface casing. If cement is not of sufficient height (less than 25' below ground level), place redi-mix cementer on will call.
33. Excavate hole around surface casing of sufficient size and depth to allow welder to cut off 8-5/8" surface casing at least 5' below ground level.
34. Have welder cut off 8-5/8" surface casing at least 5' below ground level.
35. MIRU ready cement mixer. Fill the last 100' inside the 8-5/8" surface casing. 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.
36. 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.
37. Properly abandon flowlines as per Rule 1103.
38. Have excavation contractor back fill hole with native material. Clean up location and have leveled to plant any vegetation required.
39. Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.

