

## SEC Four 5-4 (94271)

## Bradenhead

1. Level location for base beam equipped rig.
2. Call Foreman or Field Coordinator before rig up to catch plunger, isolate production equipment, and ask if replacement parts/equipment are requested. Operations need to hook up the Bradenhead through hardline to a tank and bleed off the pressure before the rig gets on location.
3. Check and report surface casing pressure prior to bleeding off. If surface casing is not accessible at ground level, re-plumb so valve is at ground level.
4. If the tubinghead is not rated to 5000 psi then replace the wellhead and all the valves and fittings to make the tubinghead good to 5000 psi.
5. Spot a minimum of 15 jts of 2-3/8" tbg (4.7#, J-55, EUE) for replacement and 140 jts of 1-1/4" (2.33#, J-55, 10rd IJ) for annular cement job.
6. MIRU WO rig. Kill well, as necessary, with freshwater treated with biocide. ND WH. NU BOP.
7. MIRU slickline. Fish plunger if necessary and tag for PBTD (should be at 7,494'). RDMO slickline.
8. PUH w/ tbg string to break any possible sand bridges, unseat landing joint and lay down. Do not exceed tbg tensile strength of 57,384 lbs (80% of yield strength).
9. MIRU 'EMI'. TOOH w/ 2-3/8" tbg. EMI tbg while TOOH. Lay down jts w/ wall loss or penetrations > 35%. Replace jts as necessary. \*\*Keep yellow & blue band tbg. Note joint number and depth of tbg leak(s) on 'Production Equipment Failure Report' in 'Open Wells'. Clearly mark all junk (red band) tbg sent to the yard.
10. TIH w/ 2-3/8" tbg and 4.5" RBP and packer (4.5" csg, 11.6#, I-80). Set RBP @ +/- 4,360' (Collars are at +/- 4,335' and +/- 4,380'). Pressure test the RBP and csg to 5,000 psi. spot 2 sx of sand on top of RBP and TOOH w/ the packer.

11. Bleed-off pressure and ND BOP's. ND wellhead. Un-land 4-1/2" csg string. NU double entry flange. NU BOP.
12. PU 1-1/4" tbg and TIH outside of 4-1/2" csg in open hole to +/- 3,722' to tag existing cement. Circulate with freshwater treated with biocide to clean up annulus while TIH.
13. MIRU cement services and water truck containing freshwater for cementing. Circulate on bottom with freshwater treated with biocide until returns clean up with rig pump.
14. Rig up cement trucks.
15. Pump 400 bbls of drilling mud followed w/ 5 bbls of freshwater and cement job consisting of 20 bbls sodium metasilicate followed by 1000 sx 15.8 ppg neat Class G cement w/ 1/4#/sx cello-flake. Displace cement in tbg w/ water. The cement to be retarded for 125 °F for 6 hr pump time.
16. TOH w/ 114 jts to +/- 200' and reverse circulate 2 times the tbg volume w/ drilling mud or until the cement cleans up.
17. RD cementing.
18. TOOH and LD w/ 1-1/4" tbg and shut well in overnight. Make sure the tread protectors are installed.
19. MIRU wireline and run a CCL-GR-CBL-VDL from 3,750' to 700' or the top of cement. If cement isn't above 870' then get with the engineer on further cement work.
20. ND BOP. ND double entry flange and crossover. PU and land 4-1/2" csg in slips. NU tbg head.
21. PU and TIH w/ 2-3/8" tbg and retrieveing head. Circulate sand off RBP @ +/- 4,360'. TOOH w/ RBP and SB tbg.
22. Bail if needed.
23. TIH 2-3/8" NC, 2-3/8" SN, and 2-3/8" (4.7#, J-55, EUE). Land tbg at +/- 7,822'.
24. Broach tbg to seating nipple. ND BOPs. NU master valve and tbg head adaptor and install 3' pup joint above master valve. Hydrotest tbg head assembly to WH rating for 15 min. RDMO WO Rig.

25. Clean location and swab well back to production, if necessary. Notify Foreman/field coordinator of finished work and turn well over to production team.