

## Stone 22-34: Bradenhead

- 1 Well has a directional survey – spud 5/27/07.
- 2 Call foreman and/or field coordinator 24 hours before rig up to isolate any production equipment (remove plunger, wellhead automation, etc.). Prepare to move base beam rig onto location. Install fence if needed. Operations need to bleed off the bradenhead pressure before the rig gets on location.
- 3 Check and report surface casing pressure. If valve is not accessible at ground level, re-plumb so valve is at ground level.
- 4 MIRU slickline. RIH to retrieve production equipment and tag for fill. Note tagged depth in OpenWells. RDMO slickline. **\*\*Reverse circulate to cleanout sand if slickline indicates fill above 7,527' (depth of bottom Codell perms)\*\***
- 5 MIRU WO rig. Kill well as necessary with water and biocide. ND wellhead. NU BOP.
- 6 Unland 2-3/8" tbg and lay down landing joint. TOO H and stand back all 2-3/8" tubing.
- 7 PU 10,000 psi rated from above and below RBP (4.5", 11.6#), retrieving head, and 2-3/8" tubing. Set RBP at +/- 4,000' (collars located at 3,975' and 4,017').
- 8 Release tbg from RBP and circulate all gas out of the hole. Pumping water with biocide, pressure test RBP and production casing to 1,000 psi for 15 minutes. If pressure test passes, proceed; otherwise contact engineering.
- 9 Circulate 2 sx of sand on top of RBP and TOO H with 2-3/8" tubing.
- 10 ND BOP. Screw 4-1/2" 11.6# pup joint into production casing and un-land 4-1/2" production casing. NU double entry flange. NU BOP.
- 11 PU approx. 38 joints of 1.66" 2.3# J-55 10RD IJ tubing and TIH between the 4-1/2" production casing and open hole to +/- 1,200'. Circulate with freshwater and biocide to clean up annulus while TIH.
- 12 MIRU cementing services. Pump 1 bbl freshwater spacer and cement job consisting of 20 bbls of sodium metasilicate, 150sx (based on 9" hole size and 10% excess) of 15.8ppg neat Class G cement with 1/4# per sx of cello-flake. The cement should be retarded for 125 degree Fahrenheit with a six hour pump time. (attempt to cement from 1,200' to 694').
- 13 Under displace cement in 1.66" 2.3# J-55 10RD IJ tubing to 600' using 1.1 bbls of freshwater (estimated TOC at +/- 641'). RDMO cementing services.
- 14 TOO H and LD 1.66" 2.3# J-55 10RD IJ tubing. ND BOP and double entry flange. Use 4-1/2" pup joint to re-land 4-1/2" casing. NU BOP. Shut well in and WOC.
- 15 MIRU wireline services. RIH with CCL-GR-CBL-VDL. Run from 1,300' to top of cement (estimated +/- 641'). If the cement is not above 744' contact engineer.
- 16 PU and TIH with retrieving head and 2-3/8" tubing. Circulate sand off of RBP. Latch onto and release RBP. TOO H standing back all 2-3/8" tubing and LD RBP.
- 17 PU 2-3/8" NC, 2-3/8" XN nipple (be sure nipple is correctly input into OpenWells), and 2-3/8" 4.7# J-55 tbg to surface. **\*\*Reverse circulate to cleanout to PBMD at +/- 7,641' if necessary\*\*** Land EOT at +/- 7,480' (1 joint above top Codell perms).
- 18 RU rig lubricator. Broach tubing to XN seating nipple. RD rig lubricator. ND BOP.
- 19 MIRU hydrotesters. Make sure tubing head adaptor and all wellhead valves are rated to 5,000 psi.
- 20 Install 2-3/8" pup joint above the master valve. Pressure test the tubing head from below the tubing head through the master valve to 5,000 psi using hydrotester. RDMO hydrotester. NU WH.
- 21 RDMO WO rig. Return well to production team.

Well needs bradenhead cement job

Well is to be worked on in preparation for the upcoming ENCANA DEVORE HZ pad

TOC: 3,530'; NB top: 7,232'

Soonest Frac: 12/8/2013

NPV: \$434M; no wellbore integrity issues

Full Circle