

DURAN 7-15 BRADENHEAD REMEDIATION PROCEDURE

- 1 Level location for base beam 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 pressure and bleed off the pressure before the rig gets on location.
- 3 Check and report surface casing pressure. If surface casing is not accessible at ground level, re-plumb so valve is at ground level.
- 4 Spot a minimum of 10 jts 2-3/8", 4.7#, J-55 EUE TBG for replacement and 47 jts 1-1/4", 2.33#/ft, J-55 10rd IJ for annular cement job.
- 5 MIRU slickline. Fish production equipment as necessary and tag fill. Note tagged depth in OpenWells. Sand plug at +/- 7816'. RDMO slickline.
- 6 MIRU WO rig. Kill well, as necessary, with biocide treated fresh water. ND WH. NU BOP.
- 7 Unseat landing joint and lay down.
- 8 MIRU EMI services. TOO H with 2-3/8" TBG while SB. EMI on TOO H. LD joints with wall loss or penetrations > 35%. Replace joints as necessary. **Keep yellow & blue band tubing. Note joint number and depth of tubing leak(s) on PRODUCTION EQUIPMENT FAILURE REPORT IN OPEN WELLS.
- 9 TIH with 2-3/8" TBG & RBP suitable for 4-1/2", 11.6#, I-80 casing. Set RBP at 5240'. (Collars at 5216' & 5260').
- 10 Circulate gas out of well and pressure test RBP & CSG to 2000 psi for 15 min. Dump 2 sx sand on top of RBP & TOO H while standing back TBG.
- 11 ND BOP. ND WH. Unland 4-1/2" casing. NU double entry flange.
- 12 PU 1-1/4", 2.3#/ft J-55 10rd IJ tubing and TIH outside 4-1/2" casing and open hole to 1400'. Circulate with biocide treated fresh water on TIH.
- 13 MIRU cement services. Mix and pump cement job as follows: Freshwater spacer, 20 bbls Sodium Metasilicate, 310 sx 15.8 ppg neat Class G cement with 1/4#/sx cello-flake. The cement is to be retarded for 125 degF for a six hour pump time. (Attempt to cement from 1400' to 700').
- 14 Trip out of the hole with 1-1/4" tubing and shut in overnight.
- 15 Rig down cementing services.
- 16 Reland 4-1/2" CSG. SDFN to WOC.
- 17 MIRU wireline services.
- 18 PU and RIH with CCL-GR-CBL-VDL. Run from 1500' to surface, or 200' above the top of cement. RDMO wireline. If the cement is not above 700' then contact engineer.
- 19 PU and TIH with 2-3/8" TBG & retrieving head. Circulate sand off RBP, latch RBP and TOO H standing back TBG & laying down retrieving head and RBP.
- 20 If clean out is not necessary, skip to the next step. PU and TIH with TBG and clean out to at least 7730'. Bail if/when needed to assist with cleanout. (Bottom Codell perf 7586') TOO H and SB 2-3/8" TBG.
- 21 PU and TIH with NC, XN profile nipple, and 2-3/8" TBG and land well at 7530', which is 1 jt above Codell perfs.
- 22 RU rig lubricator. Broach tubing to XN nipple. RD rig lubricator.

- 23 ND BOP. NU WH. Ensure all valves on WH are rated to minimum 5000 psi and ensure new TBG head has new R-46 ring gasket installed.
- 24 MIRU hydrotester. Pressure test new TBG head to 5000 psi for 15 minutes. After successful pressure test, proceed.
- 25 RDMO WO Rig. Clean location and swab if necessary. Notify Foreman or Field Coordinator of completed workover operations and turn well over to production team.