## BRADENHEAD REPAIR PROCEDURE GELBKE COM 1E

## February 11, 1993

- 1. Record TP, SICP, and SIBHP.
- MTRUSU
- 3. Blow down well. Do not kill if possible.
- 4. Install BOP.
- 5. Tag bottom and TOH with 2 3/8" tubing.
- 6. Make a scraper run for the 4 1/2" liner.
- 7. TIH with RBP and set at 6900'. Cap with 5 sacks of sand.
- 8. Make a scraper run for the 7" casing.
- 9. Pressure test the entire wellbore to 1000 psi.
- 10. If either casing string or the liner top do not hold pressure, cate leak(s), and notify Paul Edwards in the Denver office before proceeding with any squeeze work.
- 11. Run a GR/CBL from 6900' to surface. Determine TOC for the 4 1/2" liner, and for both stages of the 7" casing primary cement jobs.
- 12. TIH with RBP and set at 3000'. Cap with sand.
- 13. TIH with a 4" casing gun and perforate two holes between the Fruitland and the PC (estimated to be at 2590'). Check depth by correlating the GR/CBL with Halliburton's Spectral Density Log for the Lawson Gas Com B 1 of sec 11, T31N R11W, dated 90/10/01. If the CBL run in step 11 shows that the PC and Fruitland are not in communication then steps 13-17 may not be necessary.
- 14. TIH with cement retainer and set at 2200'.
- 15. Conduct a block squeeze by pumping 600 sacks of cement through the perfs. Because this squeeze is being conducted across the PC & Fruitland, the cement slurry should contain adequate fluid loss additives and should be preceded by a preflush used in high fluid loss applications.
- 16. Sting out of retainer, TOH, and WOC.
- 17. Drill out cement to RBP. Pressure test squeeze perfs and resqueeze if necessary.
- 18. Reset RBP to 1500' and cap with sand.
- 19. TIH with a 4" casing gun and perforate two holes within 50' of the TOC of the second stage primary cement job.
- 20. Establish circulation to surface through perfs until returns are clean, clean, clean. Calculate annular volume.
- 21. Conduct a circulation squeeze by pumping 200% of the calculated annular volume. Do not displace until cement returns are seen at the surface. Displace with water, hold pressure on squeeze, and WOC.
- 22. If cement is circulated to surface, tie into the bradenhead and keep cement level at the surface in case any fallback occurs.
- 23. Drill out cement, pressure test, and resqueeze if necessary.
- 24. TOH with RBPs at 1500' and 6900'. Lay down 2 3/8" tubing.
- 25. TIH with 1" coiled tubing, clean out to PBTD (7170') with nitrogen, and land at 7110'.
- 26. Modify wellhead accordingly for the coiled tubing.
- 27. Return well to production.