PROCEDURE
LAWSON LS 1A

All water used in this procedure which will be exposed to the Mesaverde should contain 3% KCl.

1. Record tubing, casing, and bradenhead pressures.
2. MIRUSU.
3. Install BOP.
4. Unseat packer at 5004' and TOH with 2 3/8" tubing without killing well, if possible.
5. TIH with RBP and set at 4150'.
6. Run a GR/CBL from 4150' to surface and determine top of cement for 4 1/2" liner and the 7" casing.
7. Pressure test casing and liner top to 1000 psig. Locate leaks if necessary.
   a) If a leak exists through the liner top, pump 200% of the annular volume from the liner top to the TOC of class B cement.
   b) For leaks below the TOC of the 7" casing, conduct block squeezes on these until they will pressure test to 1000 psi.
   c) For leaks above the TOC of the 7" casing, contact Paul Edwards in the Denver office. Options at this point will vary between squeezing existing holes to backing off casing, replacing it, and cementing to surface through a DV tool.

The remainder of the procedure assumes there are no leaks above the TOC of the 7" casing

8. Set a RBP 50' below TOC in 7" casing, cap with 5 sacks of sand.
9. Perf one hole within 50' of the TOC.
10. Set a retrievable cement retainer 200' above the perf.
11. Establish circulation to surface, calculate annular volume with a dye.
12. Pump a preflush for high fluid loss applications prior to the squeeze.
13. Pump 300% of annular volume of class B cement through squeeze perf. Annular volume is estimated to be 25 bbl. (300% expected to be 430 sacks). Stage last 5 bbl and note returns throughout job. Do not pump light cement.
14. Reverse out and WOC at least 24 hours.
15. TOH with retainer and drill out cement to uppermost RBP.
16. Pressure test squeeze perf to 1000 psi; run CBL if pressure holds and if cement was not circulated to surface..
17. Resqueeze until pressure test holds, and cement is to surface.
18. Retrieve both RBPs.
19. If several holes were shot in the 7" casing, contact office for the possibility of running 4 1/2" or 5 1/2" casing to the liner top, or even backing off of the 4 1/2" liner hanger and then tying 4 1/2" casing back to the surface.
20. TIH with open ended 2 3/8" tubing with a seating nipple one joint off bottom. Clean out well to PBTD of 5281'.
21. Land tubing at 5200'.
22. Swab back any load such that the well will kick off.
23. Return well to production.