

PROCEDURE TO RECOMPLETE IN BONE SPRING  
VACA "13" FEDERAL NO. 1  
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8. Rig up perforators, 5,000 psig lubricator and packoff. RIH with 4" casing gun and perforate with 1 SPF and 90° phasing, the following Bone Spring intervals, using Schlumberger open-hole CNL-FDC log run 9/1/83:  
  
12,230'-12,282' (53 holes)  
12,320'-12,356' (37 holes)
9. RIH with RBP, packer, SN and 2-7/8" tubing. Set RBP @  $\pm 12,400'$  and pressure test to 5,000 psi for 15 minutes. Spot one sack of sand on RBP. PU and set packer @ 12,302'.
10. Acidize interval 12,320'-12,356' with 3,000 gallons 7.5% HCL @ 6 BPM according to the attached procedure. Use ball sealers to divert.
11. Swab test to determine oil cut.
12. Kill well with 10 ppg brine water, unseat packer @ 12,302', lower and reverse ball sealers and sand off RBP @ 12,400'. Latch RBP and reset @ 12,305'. Pressure test RBP to 5,000 psig for 15 minutes. Spot one sack of sand on RBP. PU and set packer @ 12,100'±.
13. Acidize interval 12,230'-12,282' with 3,000 gallons 7.5% HCL @ 6 BPM according to the attached procedure. Use ball sealers to divert.
14. Swab test to determine oil cut.
15. Unseat packer @ 12,100', lower packer and latch RBP @ 12,305'. Reverse ball sealers and sand off RBP. POH with RBP.
16. PU Otis Perma-Lach packer with Otis Overshot Tubing Seal Divider (on/off tool with profile I.D. of 2.313"). RIH on 3-1/2" 9.3 lb/ft. N-80 tubing (rental frac string) to  $\pm 12,100'$ . Pickle the tubing by pumping 300 gal. of 7-1/2% HCL acid to the packer, and then reverse the acid back to a tank. Displace the brine water out of the tubing with treated 2% KCL water. Set the packer at  $\pm 12,100'$  with  $\pm 12,000$  lbs. compression. ND BOP and NU tree.
17. Fracture treat Bone Spring sand intervals 12,230'-12,282' and 12,320'-12,356' down 3-1/2" tubing according to the attached procedure. Shut-in well. Rig down frac equipment.
18. Open to frac tank, flow well back. Swab if necessary. Flow test.
19. Load tubing with treated 2% KCL water or treated 10 PPG brine water and set blanking plug in top of packer. ND tree and NU BOP. POH LD 3-1/2" tubing. TIH with 2-7/8" tubing and circulate hole adding packer fluid chemicals to brine water. Latch onto packer, ND BOP and NU tree. Pull blanking plug.
20. Place on production.
21. Inspect all tubing remaining on location. Check with Larry Shoemaker.

Hal Crabb, III

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