

NESTE "6" NO. 1  
North Shugart Field  
Eddy County, New Mexico

Workover to Stimulate Bone Spring "E" Carbonate  
and  
Add Additional "E" Carbonate Perforations

1. One day prior to rigging up, hot oil tubing to clean out paraffin deposits. Pump well to battery overnight.
2. MIRUSU.
3. Release pump, hot oil tubing, and POH with rods and pump.
4. Remove wellhead, release tubing anchor, and install BOP.
5. Tag TD with tubing, then tally out of hole with 2-7/8", 6.5#/ft, J-55, EUE, 8rd production tubing (laying down tubing anchor).
6. GIH with retrievable bridge plug and packer on 2-7/8" production string, testing tubing to 5000 psi.
7. Set retrievable bridge plug at 7800' and test to 1000 psi.
8. Set packer at 7600'.
9. Remove BOP and NU wellhead. Install tree saver.
10. Acidize Bone Spring "E" Carbonate from 7733' to 7672' with 10,000 gallons 15% NEFE HCl \*acid foamed to 65 quality with 2500 SCF/Bbl of N<sub>2</sub> as follows:
  - A. Load backside with 2% KCl and pressure up to 1000 psi.
  - B. Pump 10,000 gallons of \*acid foamed to 65 quality with N<sub>2</sub> at 7 BPM (total rate) at an estimated surface pressure of 4000 psi. Do Not Exceed 4500 PSI. Drop 1 ball sealer every 7 barrels (34 balls total).
  - C. Flush with 47 bbl of 2% KCl containing 800 SCF/Bbl.
  - D. SI well for one hour.

| <u>Total Rate</u><br><u>BPM</u> | <u>Liquid Rate</u><br><u>BPM</u> | <u>N<sub>2</sub> Rate</u><br><u>SCF/MIN</u> |
|---------------------------------|----------------------------------|---|
| 5.0                             | 1.75                             | 4375  |
| 5.5                             | 1.93                             | 4813  |
| 6.0                             | 2.10                             | 5250  |
| 6.5                             | 2.28                             | 5688  |
| 7.0                             | 2.45                             | 6125  |

11. Flow and/or swab well reporting hourly fluid recoveries, oil cut, choke size, and tubing pressure to determine fluid entry. If recoveries indicate well is capable of producing the top allowable of 230 BOPD, wait on orders from Midland Office. If recoveries indicate well is incapable of top allowable, proceed to Step 12.

12. Remove wellhead, release packer and install BOP. TIH and unset retrievable bridge plug at 7800'.
13. Set the retrievable bridge plug at 7600' and test to 1000 psi.
14. POH with retrievable packer on 2-7/8" production string.
15. Rig up a wireline company.
  - A. Perforate the Bone Spring "E" Carbonate intervals listed below 1 jspf utilizing a 4" hollow steel carrier gun. Use packoff when perforating.

|               |     |          |
|---------------|-----|----------|
| 7506' - 7512' | 6'  | 7 holes  |
| 7514' - 7524' | 10' | 11 holes |
| 7530' - 7534' | 4'  | 5 holes  |

Corrected Collars

7359'  
7397'  
7441'  
7484'  
7529'  
7574'  
7618'  
7664'

- B. POH and rig down wireline truck.
16. GIH with treating packer on 2-7/8" production string to 7534'.
17. Acidize the Bone Spring "E" Carbonate perforations 7534' to 7506' with 2500 gallons of 15% NEFE HCl \*acid as follows:
  - A. Spot 2 Bbl of \*acid from 7534' to 7448'.
  - B. Pull uphole to 7400'. Pump 3 bbls 2% KCl down backside and set packer.
  - C. Load backside with 2% KCl and pressure up to 1000 psi.
  - D. Pump 2400 gallons of \*acid at 4 BPM at an estimated surface pressure of 3200 psi. **Do Not Exceed 4000 PSI.** Drop 1 ball sealer every 1.5 barrel (38 balls total). If ballout occurs, hold pressure for 10 minutes then surge balls and continue treatment.
  - E. Flush to bottom perforation with 46 Bbl of 2% KCl.
  - F. SI well for one hour.

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18. Flow and/or swab well reporting hourly fluid recoveries, oil cut, choke size, and tubing pressure to determine how productivity compares to lower Bone Spring "E" Carbonate intervals.
19. Release bridge plug and packer and POH. Lay down bridge plug and packer.
20. TIH with SN, 31 joint 2-7/8" tubing, tubing anchor, and remainder of production tubing. Place SN at 8454' and tubing anchor at 7493'. Remove BOP, set tubing anchor, and NU wellhead.
21. Pick up 1-1/2" pump, 155 - 3/4" rods, 90 - 7/8" rods, and 90 - 1" rods. Space out. HWO. RDMOSU.
22. Begin pumping well. Desired pumping configuration is 9 SPM in second stroke hole (144") with Sargent Econo Pac II 4 in high torque mode. Pump capacity at 80% efficiency = 272 BPD.

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