

WORKOVER PROCEDURE

H. Laughlin NO. 6

Monument Field

Lea County, New Mexico

with +/- 1.5 bbls of 7-1/2% HCL (not weighted) with additives. Pump acid into each selection at maximum rate not to exceed 4500 psi. Displace acid on final selection with 10 bbls of 2% KCl water. PU PPI to 3000' (casing collars at 2977' and 3023') and set packer. Remove standing and fluid control valves. *NOTE: Please complete a perforation break-down report for each setting of the PPI tool. FAX this report to 687-8417 (Attn. Bose).*

Perform ball-out acid job using weighted 7-1/2% acid from transport. Establish injection rate with 2% KCL water. Start balls immediately with acid. Drop balls evenly through-out job. Pump weighted acid at maximum rate not to exceed 4500 psi. Displace acid with 12 bbls of 2% KCL water. Surge well to pit or tank to release balls. Release PPI packer and lower same to bottom. Reverse out any ball sealers than may be floating using 15 bbls of 2% KCl water.

14. PU PPI tool to 3000' and reset packer. Swab and test the well. Consult with engineering (Randy Bose -687-8416). A bottom hole pressure may be requested. This lower interval may be proppant-fraced prior to working on upper interval.

15. **Isolate Lower Interval**

Kill well with 2% KCL water. POOH with tubing and PPI tool. Isolate perforations by setting CIBP (if zone is not a keeper) or retrievable bridge plug with ball catcher (if interval is a keeper) at +/- 3000'. POOH. Load hole with 2% KCl water and test RBP against 4-inch frac valve to 4,300 psi.

16. Swab fluid level down to 2000'.

17. **Perforate Upper Interval**

RU perforating company with grease-head and lubricator. Close 4-inch frac valve and pressure test lubricator and grease-head to 1500 psi. RIH with 3-1/8" select-fire guns. The depth listed is the top perforation of each selection fired.

Perforate 1 SPF at each of the following depths: 2882, 2879, 2869, 2845, 2829, 2809, 2782, 2771, 2750, 2722, 2712, 2658, 2621, 2581, 2570, 2555, 2531, 2523, 2516, 2506 (20 selections – 2 gun runs – 20 holes).

Perforate 3 SPF at each of the following depths: 2773, 2736, 2700, 2651, 2576, 2546 (6 selections – 1 gun run – 18 holes).

Depth control use Wedge gamma ray/CCL log dated 12/3/94. Short joint at 2819-38. Additional collars at 2884, 2781, 2741, 2699, 2607, 2561, 2514). RD electric line company *CAUTION: Pressure(up to 1300 psi) is expected on the casing during the perforating operation.*

18. RD electric line company and lubricator. Flow test well to test separator or production facilities and report gas/water rates. Sample and analyze gas for BTU content. SI well over-night and report SITP next day.

19. **Acid Stimulation – Upper Interval**

If stimulation is requested, kill well with 2% KCl water. RIH with a PPI tool set on +/- 6 foot spacing.

RU stimulation company with 1 transport of 2% KCl water, 1 transport (80 bbls) of weighted 7-1/2% HCl and 1 pump truck (30 bbls) of 7-1/2% HCl acid. Acid should be inhibited for 4 hours at 100 deg F. Acid to contain foamer/surfactant and iron control additive. Acid in transport to be made in 10 ppg brine water to yield a high density acid for floating 1.1 specific gravity ball sealers. Acid on the pump truck should be regular (non-weighted) acid. Install ball injector loaded with 45 (1.1 Sp. Gr.) perforation ball sealers. Make sure ball sealers float in acid. If balls do not float, load injector with 80 ball sealers.

Test lines to 5000 psi. Do not exceed 4500 treating pressure during stimulation. Install pop-off valve on tubing/casing annulus set for 3000 psi. Do not allow casing pressure to exceed 3000 psi.