

JAMES E. RUSSELL PETROLEUM, INC.

SAVONBURG NORTHEAST

Nelson(Lowe) HW-23

WORKOVER

WELL DATA:

T.D.: 700'

Perfs.: 650'-659'

Casing: 2-7/8" - 706'

Elevation: 1,065.9

May 21, 1984:

Using TOP Wireline Service, Inc., ran Differential/Gradient Temperature Survey and a Gamma Ray/Neutron log. Logger's T.D. 668'.

Well was shut-in at 8:00 p.m. on May 20, 1984; ran log at 10:15 a.m. on May 21, 1984.

August 5, 1987:

Reason for Job: MIT and PMT

Broke down well and backflowed. Rigged up and set up rotary table. Reamed 1" from surface to T.D. of 661'. No apparent SN. At 661' started drilling on metal. Circulated hole clean and pulled 1" up to 659'. Spotted 2 carb. acid and worked into perfs and let set 1 hour. Circulated hole clean and pulled 1". Ran in 1" and packer for MIT. Passed MIT. Pulled 1".

August 7, 1987:

Reason for Job: Profile Modification Treatment

Mixed with 98 bbls. of city water, 200 lbs. synthetic polymer (5,500 ppm), 350 lbs. salt (10,000 ppm), 35 lbs. of calcium chloride (1,000 ppm), and 6 qts. acid. As polymer solution was hydrating, the required reagents of Sodium Dicromate (6 lbs. 8 oz.) and Sodium Thiosulfate (6 lbs., 8 oz.) were prepared.

Began injection at 35 B/D at wellhead pressure 230 psi. Samples were taken and pressure monitored.

August 8, 1987:

Continued injection of polymer solution at 400 psi. Mixed daily is the required reagents of Sodium Dicromate (6 lbs., 8 oz.) and Sodium Thiosulfate (6 lbs., 8 oz.).

August 9, 1987:

Continued injection of polymer solution at 440 psi.

August 10, 1987:

After injecting a total of 97 bbls. of polymer solution at 470 psi, the pump was shut down to mix up another 97 bbls. of polymer solution. Mixed with 97 bbls. of city water, 200 lbs. synthetic polymer (5,500 ppm), 350 lbs. salt (10,000 ppm), 35 lbs. of calcium chloride (1,000 ppm), and 4 qts. acid.

August 11, 1987:

Continued injection of polymer solution at 540 psi.

August 12, 1987:

Continued injection of polymer solution at 550 psi.

August 13, 1987:

Shut down profile modification treatment after injecting a total of 199 bbls. at 590 psi. Cleaned casing with 10 bbls. of injection water at 590 psi. No polymer has been detected at any surrounding producers. Shut in well at 590 psi.

September 2, 1987:

Reason for Job: To Increase Injection after PMT
Current: 10 B/D @ 640 psi
Rec.: 65 B/D

Broke down wellhead - well did not backflow. Rigged up and ran string 1" with full size mill bit to 661'. Set down on solid bottom. Washed well up, getting out small amount of polymer. Spotted 15 gal. acid and let set and work 1 hour. Washed well up, small amount of polymer came back. Spotted 15 gal. acid and worked into perms with approx. 1 bbl. water. Let set and worked 30 minutes. Washed well up. After second acid treatment well gave up small amount of polymer and then some oil. Hooked up well and pumped into. Well taking at 500 psi. Pulled 1" and put back onto injection.

September 3, 1987: 51 B/D @ 520 psi

September 4, 1987: 43 B/D @ 570 psi

September 5, 1987: 29 B/D @ 580 psi

September 6, 1987: 24 B/D @ 520 psi