

FORM C-103

Humble Oil & Refining Company

New Mexico State M No. 28

8. Set CI bridge plug at 3680 on wire line. Set CI squeezing tool at 3575 by wire line. Went in hole with tubing and latched into squeeze tool. Squeezed perfs 3603, 3607, 3620, 3629, 3634, 3661, 3673, with 150 sacks Incor neat cement with 1% Halad 9 and 2% calcium chloride. Failed to squeeze. Squeezed same perf with 100 sacks Incor neat cement with 1% Halad 9 and 2% calcium chloride. Tested OK. Reversed out 10 sacks and pulled tubing.
9. Went in hole with drill pipe. Drilled through 3' cement plug on top of squeeze tool, squeeze tool and cement to a depth of 3680. Pulled drill pipe.
10. Perforated 2-7/8" casing at 3603, 3607, 3620, 3629, 3634, 3661, 3673 with one jet shot per foot by Welex. Swabbed dry.
11. Dumped 500 gallons HCL acid over perforations.
12. Treated perforations with 10,000 gallons slick water with 1/2# sand per gallon using ball sealers. Dropped one ball sealer with each 1000 gallons slick water. Used a total of 9 sealers. Average injection rate of 12 BPM. Average treating pressure 1800#. Job by Halliburton.
13. Checked and found frac sand at 3625. Drilled and washed out frac sand down to 3678.
14. Ran radio-active flow meter survey by Cardinal Survey. Found fluid entering perfs 3603, 3607, 3620, 3629, 3634. Also found some communication upward of 3603-3607 perforations.
15. Started drilling out CI bridge plug at 3678. Drilled and pushed plug down to 3694. Drilled through hard cement from 3694 to 3734.
16. Perforated 2-7/8" casing at 3702 and 3724 with one shot per foot with Schlumberger scallop gun.
17. Went in hole with Halliburton RTTS tool to 3680 on drill pipe. Loaded drill pipe with 3.3 barrels of water. Broke down formation through perforations 3702 and 3724 at 1900#. Pumped water into perforations at 1400# at a injection rate of .75 BPM. Injected 3 bbls water and dropped one ball sealer. Increased pressure on ball on perforation from 1400# to 1600#. Injected a total of 10 bbls of water into formation. Shut pressure down to 800# and in 15 minutes drill pipe was on vacuum. Pulled drill pipe and RTTS tool.
18. Well converted from producing well to water injection well.