

Arrowhead Grayburg Unit 195
Arrowhead Grayburg Field
Lea County, New Mexico

July 16, 1997

PROCEDURE TO CLEAN OUT AND ACIDIZE:

1. MIRU PU. RU BOPE.
2. Tag bottom for fill. POOH w/ prod equipment.
3. If fill is above 3900' or if scale is found on the pump or tubing then clean out w/ a 4 3/3" bit to TD @ 3904'.
4. RIH w/ 5 1/2" treating packer and set @ +/-3600'. Drop standing valve, open bypass, and pickle tubing with 500 gal 15% HCl* by pumping down @ 1/2 bpm displace out of tubing and reverse out @ 1/2 bpm. The slower the better. Record iron ppm at first middle and end of pickle acid.
5. Acidize OH w/ 5000 gals 15% Resisol II Plus** vicosified acid containing 20% toluene. Use the following pumping schedule @ 2-4 bpm max treating pressure of 1500 psi:
 - A. Pump 1250 gals Resisol II Plus**
 - B. Drop 500# Trimix salt in 10 bbls gelled brine water***
 - C. Repeat step A and B three times adjusting block as necessary.
 - D. Pump 1250 gals Resisol II Plus**
 - E. Flush to top perf/open hole.
6. SI for 3 hrs and then swab until returns clean up. POOH. If there is time to get the well on pump today then skip swabbing.
7. Run production equipment per field operations design. Hang well on.
8. Clean and Clear location. Turn well over to Production.

* Pickle acid to contain 1 gal/1000 CI-23

** Resisol II Plus -- Iron control system to follow tapered concentration as follows:

Lead 2000 gal = 3 gal/1000 FE270 & 1 gal/1000 FE271

Mid 1500 gal = 1.5 gal/1000 FE270 & 1 gal/1000 FE271

Tail 2500 gal = 0.5 gal/1000 FE270 & 1 gal/1000 FE271

*** All flush water and diverter GBW stages to contain appropriate de-emulsifiers (NE agents = 1 gal/1000 NE-13)

Andrew McCarty 687-7702