

South Cottonwood Draw Unit Well #1  
Wildcat Atoka  
T16S-R24E, Section 29  
1980' FWL; 660' FSL  
3691 Gr  
Eddy County, New Mexico

2/10/88 Move in and rig up Mack Chase.

2/11/88 Finish rigging up. Install BOP's, run in hole to pressure test casing with RTTS and retrievable bridge plug. Unable to release bridge plug, received permission from the Oil and Gas Commission to cancel the test of interval 6200'-4375'. Retrieve tools, run RTTS to 4255'. Pressure up on backside - doesn't hold, reset packer at 4195' - still doesn't hold, assume there's a casing leak in the annulus. (Takes fluid at  $\frac{1}{2}$  barrel per minute on vacuum.)

Discuss problem/repair program with the Oil and Gas Commission. Will proceed with the test of the Strawn formation before determining repair program.

Run RTTS to 6200', swab on tubing. Initial Fluid Level at 50', Final Fluid Level at 1200'. Shut down for night.

2/12/88 SITP 10 psi, Initial Fluid Level 400'. Swab on tubing all day long (34 pulls). Recovered about 105 barrels of water (80 barrels over tubing volume). Made last 10 pulls off bottom. Water production seemed to be  $3\frac{1}{2}$  barrels per hour, dropped to  $1\frac{1}{2}$  barrels per hour on the last 2 pulls. Release rig crew for night.

Flared well for 3 hours on 8/64" choke. Pressure 5-10 psi, estimated rate 5-8 MCFD.

Water samples analyzed by Halliburton. 21,000 ppm Chlorides, no KCL, likely formation water. (Approximate chlorides for area zones: ABO-26,000; WOLFCAMP-80-100,000; STRAWN-50,000).

2/13/88 SITP (11 hours shut-in) 135 psi. Bled off in 4 minutes. Initial Fluid Level 4600' (i.e., calculated bottom hole pressure 886 psi). Pull 13 swabs, making about 1 barrel of water per hour. Acidized well with Halliburton - 2,000 gallons of 15% NeFe + 1% HAI 65 + 2% Low Surf + 1% Howco Suds + 44 ball sealers. Average pressure 2350 psi, average rate 4 barrels per minute. Good ball action. Balled off after 32 balls to 3200 psi, flushed with 24 barrels flush water. Initial Shut-In Pressure 1750 psi, 5 minutes shut-in 1320, 10 minutes shut-in 1050, 15 minutes shut-in 830. Well dead - swab on well rest of the day. Pull 22 swabs, recover 25 barrels flush and 48 barrels spent acid. Well swabbed dry - no gas flow. Shut down for night.

2/14/88 8:00 AM SITP 100 psi. Bled off CO<sub>2</sub> and natural gas in 5 minutes - very slight gas blow (too small to measure). Shut-in well.

2/15/88 SITP at 7:00 AM 25 psi (23 hours shut-in). Bled off gas and acid gas. Ran in, tagged fluid level at 3750'. Pull out of hole, set cast iron bridge plug at 6200', cap with 35' cement. Run in hole, set RTTS at 4255', swab on Wolfcamp zone, swab well dry - making about 3 barrels of fluid per hour, small amount of gas. Shut down for night.

2/16/88 SITP at 7:00 AM 40 psi, bled off gas, slight gas flow (too small to measure). Fluid level at 2300'. Begin abandonment. Program approved by Mike Williams, New Mexico Oil Conservation Division. Set cast iron bridge plug at 4250' with 35' cement cap. Remove BOP's, rig up to pull casing. Found free point at 3530'. Try to jet cut casing at 3520'; unsuccessful. Re-ran free point, found at 3330'. Cut casing at 3330'. Pull and lay down 82 joints  $4\frac{1}{2}$ " 11.6# casing. Found holes in casing at 1000' and at 2280'. Much of the casing is pitted and many collars badly corroded. Shut down for night.

2/17/88 Circulate hole to 250 barrels gel brine mud ( $2\frac{1}{2}$  sx/10 bbls). Run cement plugs as follows:

Plug #1 3380'-3280' 25 sx Premium Plus + 4% CaCl<sub>2</sub>