STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

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SANTA FE, NEW MEXICO 87501
(505) 827-2434

November 22, 1982

McClellan Oil Corporation
Drawer 730
Roswell, New Mexico 88202

Attention: Paul Ragsdale

Re: Second Request for Administrative Authorization to Increase Injection Pressure in the Sulimar Queen Unit

Gentlemen:

Pursuant to your letter of November 17, 1982, requesting administrative authorization to increase injection pressure in the Sulimar Queen Unit, the information you supplied is inadequate to substitute for step-rate test results. The Oil Conservation Division does not consider treatment tests and the information derived or inferred from them to validate increases of injection pressure.

According to Artesia District Supervisor, Les Clements, McClellan Oil Corporation has been operating those injection wells affected by WFX Orders 486 and 487 at the injection pressures of 1000 psi for at least the last six months. This is in direct violation of the orders which state 395 and 400 psi, respectively, for WFX-486 and 487.

In review of the orders it was found that the injection pressure limit of WFX Order 486 was in error. The correct pressure should be 395 psi instead of 295 psi. The injection pressure limit is established by Memo 3-77 (8-24-77) item number 1. Please refer to the attached memo for clarification.

McClellan Oil Corporation is hereby ordered to return to the authorized pressure limitations or shut in your wells. The pressure limitations shall remain in effect until approval of step-rate test results show otherwise. Correction of injection pressure limitations shall be made within five days from the date of this letter.

In reply to the Stephens Engineering letter of October 4, 1982, the type and method of step-rate test is as follows:

1. Sulimar Queen Unit Well No. 1-11, Unit L, Section 24, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico, shall be bled off until hydrostatic pressure has stabilized (zero pressure at the surface) or the bottomhole pressure is very near (5 lbs.±) the shut-in formation pressure. Proof of shut-in formation pressure (bottomhole) must be substantiated; otherwise, hydrostatic surface pressure of zero will be used.

2. After stabilization has been established, a six (6) to eight (8) point step-rate injectivity test shall be run. This test shall be a series of constant-rate injections with rates increasing from low to high. Each step shall last exactly as long as the preceding step.

3. A strip chart recording simultaneous pressure, volume, and time is required of the step-rate injectivity test.

4. Injection rates during the test shall be controlled with a constant flow-rate regulator. The regulator shall be tested before use and proof of its accuracy shall be submitted to the field inspector and submitted along with the test results. Use of a throttling valve as a flow rate regulating device will not be allowed.

5. Flow rates shall be measured with a turbine flowmeter and a rate meter such as those made by Halliburton. The flow and rate meter shall be tested and, if necessary, recalibrated. Field reports verifying testing and recalibration shall be submitted to the inspector with the rest of the testing data.

6. Pressures shall be measured with a downhole instrument. Surface pressure readings or recordings of the step-rate injectivity test will not be allowed to be substituted for downhole pressure measurements but can be simultaneously recorded and submitted as additional information.

7. All test data as outlined above and any other data relative to the step-rate injectivity test shall be submitted to the OCD. Results of the step-rate test shall be plotted

on graph paper with a written explanation of the test accompanying it. The plot shall show:

1) A plot of points as derived by plotting the pressures at the start of the test (at q = 0) and at the end of each injection rate step against their corresponding injection rates.

2) The plot shall depict downhole pressures corrected to the surface elevation of the well and, if recorded, pressures recorded at the surface. Calculations shall accompany the plot.

3) If the data does not follow Darcy's Law and is considered a non-Darcy flow (most likely due to well construction), complete calculations, methodology, and explanations thereof shall accompany the application and plot.

If you have any questions on this matter you may call Oscar Simpson at (505) 827-5812.

Yours very truly,

JOE D. RAMEY
Director

JDR/OAS/fd
enc.

cc: L. A. Clements, Artesia OCD