NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
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Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

September 13, 2007

William M. Kincaid
Stephens & Johnson Operating Co.
PO Box 2249
811 Sixth Street, Suite 300
Wichita Falls, TX 76307-2249

RE: Injection Pressure Increase Request
East Millman Q-GB Waterflood Project (Case 6477, R-6177)
WFX-824 on 2 Nov 2006
East Millman-Yates 7rvrs Qn Gbg Sa Pool (46555)
East Millman Pool Unit (Case 6450, R-5935)
Portions of Sections 12 and 13, Township 19 South, Range 28 East, NMPM
Eddy County, New Mexico

Dear Mr. Kincaid:

The Division received your request for a 900 psi, standardized maximum surface injection pressure for this waterflood project by letter dated 7 September 2007. Instead of processing this application administratively, in this case, the matter should be heard before a Division Examiner after Stephens gathers supporting reservoir and rock mechanics data and provides notice to any affected parties such as offset operators.

Order R-6177 authorized this waterflood with initially 11 injection wells, on 14 November 1979, approximately 2 years before the implementation of the Underground Injection Control ("UIC") program and New Mexico's obtaining Primacy over this federal program within the State. This time period was a transition ranging from waterflood orders that did not restrict surface injection pressure to orders that always specified the maximum injection pressures. The decision was made by the Director at that time to grandfather the pressure restrictions or lack thereof in older orders and projects. Unfortunately the case file for this order seems to be missing – except for one map - so whatever justification Sun Oil Company or the Division used for the 900 psi pressure limit is unknown. The case file for the waterflood expansion request adding 8 additional injection wells in 2006 is also lacking any injection pressure discussion other than the request for 900 psi maximum.

Your latest submittal contains a discussion asking for a 900 psi uniform injection pressure limit for all permitted injection wells based on the fact that "no adverse effects have been realized" and "no indication that injected water has migrated out of zone" from injecting at this pressure in the past.

It seems obvious that this project should have a uniform injection pressure limit, but there is a lack of tangible evidence showing what this pressure limit should ideally be and what the injection profile(s) look like under injection at 900 psi. Some questions that should be addressed include the following: It seems that three wells permitted for injection in the original order were never used and were re-permitted in the latest waterflood expansion, so there are 16 total injection wells - is this correct? What adverse effects would happen to production if the pressure were reduced and why? What beneficial effects would happen to production if the pressure were raised to a uniform level – even above the 900 psi? The new permitted injection wells are located on the western edge of the unit. Who are the affected parties to the west and what do they say about this proposed pressure increase? How successful has injection been into this project and which patterns or areas take or took the most water and why is this? Is the water entering the Queen or the Grayburg? Why hasn't the eastern edge of this project been equipped with injection wells? How has reservoir pressure changed over the years of production and then injection?

Finally what does injection tests such as Step Rate Tests run on representative wells over this project show as the point at which fractures begin to happen and propagate? When they happen, which formation are they in, what direction are the fractures going and what damage, if any, could they cause to the ultimate secondary oil sweep efficiency and recovery?

Based on the history of this project and the lack of data presented in the past and lack of data presented with this request, the Division is denying this administrative request, but encourages Stephens to gather additional data such as mentioned above and submit results before a hearing examiner for an interactive discussion on the record.

Sincerely,

Mark E. Fesmire, P.E.
Director

cc: Oil Conservation Division - Artesia
Files: Case 6477, WFX-824