

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6580 (Reopened)
Order No. R-6157-A

APPLICATION OF CONOCO INC. FOR AMENDMENT
OF DIVISION ORDER NO. R-6157 AND DIVISION
ADMINISTRATIVE ORDER NO. PMX-153, MALJAMAR
CARBON DIOXIDE INJECTION PROJECT, LEA COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on April 18, 1991, at Santa Fe, New Mexico, before Examiner Jim Morrow.

NOW, on this 30th day of April, 1991, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) Pressure maintenance through cooperative gas injection by various operators began in this project area in 1942.
- (3) The original gas injection area was expanded and pilot waterflood operations were initiated over a 20-year period. These operations were approved by various Oil Conservation Commission Orders.
- (4) On September 24, 1962, the Maljamar Cooperative Agreement project area was unitized for waterflooding with Conoco named as operator. Order No. R-2403 dated December 31, 1962 adopted a plan of operations for the waterflood project.
- (5) OCD Order No. R-6157 dated October 30, 1979, authorized carbon dioxide injection in a pilot area.

(6) Administrative Order PMX-153 dated January 13, 1989 approved the expansion of CO₂ injection.

(7) Although Conoco's 1987 plan of operations (approved by OCD, SLO and BLM) provided for the reinjection of produced CO₂ and hydrocarbon gas, Orders R-6157 and PMX-153 only authorized the injection of CO₂ and water, and did not specifically authorize the reinjection of produced hydrocarbon gas.

(8) Conoco seeks to reopen Case No. 6580 and to amend Orders Nos. R-6157 and PMX-153 to authorize, retroactively, the injection of recycled produced hydrocarbon gases, CO₂, and water into the Maljamar Grayburg-San Andres Pool.

(9) Conoco's injection of CO₂ into the Grayburg-San Andres formation in the pilot area began in May 1983. Stages 1 and 2 of full scale CO₂ injection operations began in January 1989 and January 1990.

(10) Following the initiation of full scale CO₂ injection, producing wells began producing CO₂. The volume of produced CO₂ gradually reached levels which could not be handled by the Maljamar gas plant and in March, 1990 Conoco began reinjecting produced gas which contained a high percent of CO₂. This recycled produced gas (2.1 MMCF per day) now contains 60% CO₂ and 40% hydrocarbon gas. Six wells produce most of the CO₂.

(11) As of March 1, 1991, approximately 600 MMCF of produced hydrocarbon/CO₂ gas has been reinjected.

(12) Conoco is currently evaluating the economics of constructing additional plant facilities to process the hydrocarbon/CO₂ gas prior to reinjection.

(13) Conoco's witness testified that the CO₂ project could eventually result in the recovery of 32.1 million barrels of oil, bringing total recovery from the project to 146 million barrels; 53.9% of the original oil in place.

(14) Reinjection of the hydrocarbon/CO₂ gas will not reduce the effectiveness of the project or reduce ultimate oil recovery. Reinjection is in the best interest of conservation and the protection of correlative rights.

(15) The application should be approved by amending orders Nos. R-6157 and PMX-153.

IT IS THEREFORE ORDERED THAT:

(1) Oil Conservation Division Order No. R-6157 and Oil Conservation Division Administrative Order No. PMX-153 are both hereby amended by the

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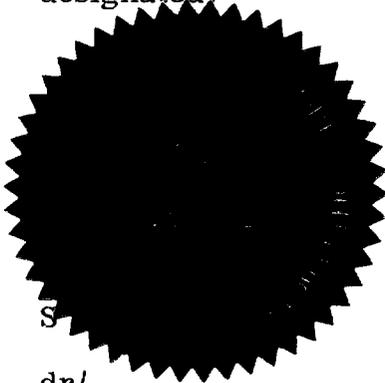
addition of the following wording to the initial ordering paragraph of each of the two orders.

"Any authority under this order to inject carbon dioxide shall also be considered to authorize the injection of water, carbon dioxide, a mixture of produced carbon dioxide and hydrocarbon gas, or any combination of these fluids."

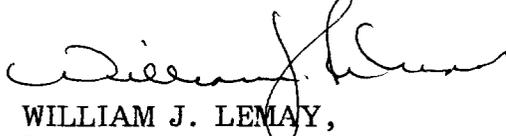
(2) Such authorization shall be considered to be effective on the date of first carbon dioxide injection into each individual injection well and all such injection which has occurred is hereby approved.

(3) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY,
Director

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