

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. 9735  
Order No. R-7926-A

APPLICATION OF DEVON ENERGY CORPORATION  
(NEVADA) FOR WATERFLOOD EXPANSION AND TO  
AMEND DIVISION ORDER NO. R-7926, EDDY  
COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on August 23, 1989, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 6th day of September, 1989, 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) Division Case Nos. 9734 and 9735 were consolidated at the time of the hearing for the purpose of testimony.

(3) By Order No. R-7926, dated May 20, 1985, the Division authorized Texas American Oil Corporation to institute a waterflood project designated the Etz-Randel State Cooperative Waterflood Project in its Etz State, Etz "B" State, Etz "C" State, and Randel State leases comprising the SE/4, S/2 NE/4, NW/4, E/2 SW/4, and the NW/4 SW/4 of Section 16, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, by the injection of water into the Grayburg and San

Andres formations, Grayburg Jackson Seven Rivers-Queen-Grayburg-San Andres Pool, through four initial injection wells located in said Section 16.

(4) Under the provisions of said Order No. R-7926, injection into each of the four injection wells as described above was limited to a maximum surface injection pressure of 0.2 psi per foot of depth to the uppermost injection perforation.

(5) The applicant in the immediate case, Devon Energy Corporation (Nevada), the successor operator to Texas American Oil Corporation, seeks to expand the previously approved waterflood project area to include the N/2 NE/4 and the SE/4 NE/4 of Section 17, Township 17 South, Range 30 East, NMPM, whereby the project area would conform to its proposed Etz State Unit Area (being the subject of Division Case No. 9734), and further seeks to be designated operator of the proposed expanded waterflood project.

(6) The applicant further seeks authority to convert two additional wells to injection as follows: Etz "J" State Well No. 22 located 990 feet from the South line and 2310 feet from the East line (Unit O) of said Section 16, and the Collier Federal Well No. 1 located 660 feet from the North and East lines (Unit A) of said Section 17. In addition, the applicant seeks authority to inject only into the Grayburg at a maximum surface injection pressure of approximately 1600 psi in the two proposed and four previously approved injection wells.

(7) The wells in the proposed expanded area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(8) The proposed waterflood expansion and plan of operation should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(9) The applicant presented engineering testimony which indicates that the fracture pressure of the Grayburg formation in this area ranges from approximately 1035 psi to 1330 psi surface pressure at the present time.

(10) The applicant further presented engineering evidence which indicates that injection at a surface pressure of 1600 psi should not result in the fracturing of the confining strata and will allow improved injectivity which in turn will allow for the timely completion of waterflood operations.

(11) In order to ensure that the injected water is being confined to the Grayburg formation, the applicant should be required to conduct a Temperature/Tracer Log on the proposed injection wells subsequent to commencement of injection operations and at a time to be prescribed by the Division.

(12) The applicant should otherwise take all steps necessary to ensure that the injected water enters only the proposed injection intervals and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(13) Devon Energy Corporation (Nevada) should be designated the operator of the subject waterflood project.

(14) The subject application and proposed amendment of Division Order No. R-7926 should be approved and the waterflood project should be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The Etz-Randel State Cooperative Waterflood Project, previously approved and defined by Division Order No. R-7926, is hereby redesignated the Etz State Grayburg Unit Waterflood Project and expanded to include the N/2 NE/4 and the SE/4 NE/4 of Section 17, Township 17 South, Range 30 East, NMPM, Grayburg Jackson Seven Rivers-Queen-Grayburg-San Andres Pool, Eddy County, New Mexico.

(2) Devon Energy Corporation (Nevada) is hereby designated the operator of said Etz State Grayburg Unit Waterflood Project.

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(3) The applicant is hereby authorized to convert two additional wells to injection as follows: Etz "J" State Well No. 22 located 990 feet from the South line and 2310 feet from the East line (Unit O) of said Section 16, and the Collier Federal Well No. 1 located 660 feet from the North and East lines (Unit A) of said Section 17.

(4) Injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(5) The operator shall immediately notify the supervisor of the Division's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(6) Prior to commencing injection into said Etz "J" State Well No. 22 and the Collier Federal Well No. 1, the casing in each well shall be pressure-tested from the surface to the proposed packer-setting depth to assure the integrity of said casing.

(7) Injection into the Etz "J" State Well No. 22, the Collier Federal Well No. 1, and the four previously approved injection wells (described in Order No. R-7926) shall occur at a maximum surface injection pressure not to exceed 1600 psi.

(8) In order to ensure that the injected water is being confined to the Grayburg formation, the applicant shall be required to conduct a Temperature/Tracer Log on said Etz "J" State Well No. 22 and Collier Federal Well No. 1 subsequent to commencement of injection operations and at a time to be prescribed by the Division.

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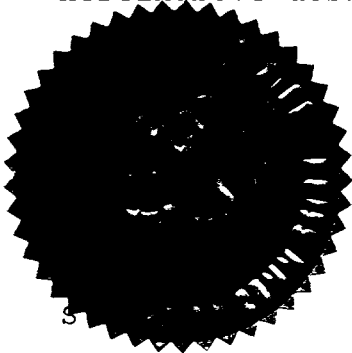
(9) The applicant shall notify the supervisor of the Division's Artesia district office of the date and time of installation of injection equipment, of the mechanical integrity tests, and of the conductance of the Temperature/Tracer Log in order that the same may be inspected and witnessed.

(10) The Etz State Grayburg Unit Waterflood Project shall be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

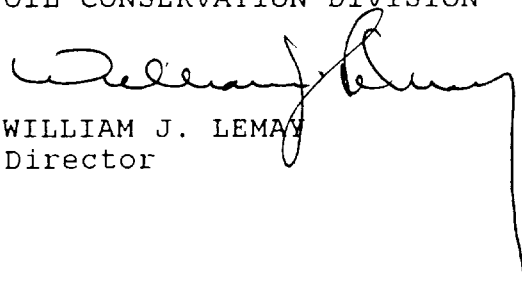
(11) Monthly progress reports of the subject waterflood shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

(12) 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