



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

GARREY CARRUTHERS  
GOVERNOR

September 26, 1989

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(505) 827-5800

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Campbell & Black  
Attorneys at Law  
Post Office Box 2208  
Santa Fe, New Mexico

Re: CASE NO. 9646  
ORDER NO R-9001

Applicant:  
**Sun Exploration and  
Production Company**

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Sincerely,

Florene Davidson

FLORENE DAVIDSON  
OC Staff Specialist

Copy of order also sent to:

Hobbs OCD	<u>x</u>
Artesia OCD	<u>x</u>
Aztec OCD	

Other David Vandiver

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. 9646  
ORDER NO. R-9001

APPLICATION OF SUN EXPLORATION AND  
PRODUCTION COMPANY FOR A WATERFLOOD  
PROJECT, EDDY COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on April 12, 1989, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 26th 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) The applicant, Sun Exploration and Production Company ("Sun"), seeks authority to institute a pilot waterflood project on its Mobil "22" Federal Lease comprising the E/2 NW/4 and S/2 of Section 22, Township 26 South, Range 29 East, NMPM, Eddy County, New Mexico, by the injection of water into the Brushy Draw-Delaware Pool through its existing Mobil Federal "22" Well No. 5 located 990 feet from the South line and 2310 feet from the West line (Unit N) of Section 22.

(3) J.C. Williamson, an operator in the Brushy Draw-Delaware Pool and operator of a commercial disposal well in the area, filed a written objection to Sun's application prior to the hearing and at the time of the hearing appeared in opposition to this case.

(4) At the hearing, Sun demonstrated that an incremental secondary recovery of oil of 220.8 MSTBU could be obtained by institution of the proposed pilot waterflood project, resulting in the recovery of additional oil which would not otherwise be recovered, and the waste of oil would thereby be prevented.

(5) The volumes which Sun proposes to inject do not exceed the current reservoir voidage from the proposed injection well and the four offsets thereto and the correlative rights of operators in the pool will therefore not be impaired by the proposed injection.

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

(7) Sun proposes to utilize the Mobil Federal "22" Well No. 5 to inject water produced from the Brushy Draw-Delaware Pool back into this pool in the perforated interval from approximately 4938 feet to 5010 feet.

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

(9) Injection should be accomplished through 2 7/8-inch internally cement-lined tubing installed in a packer set at approximately 5850 feet; the casing-tubing annulus should be filled with an inert fluid; and a pressure gauge or approved leak-detection device should be attached to the annulus in order to determine leaks in the casing, tubing or packer.

(10) Prior to commencing injection operations, the casing of the subject well should be pressure-tested throughout the interval, from the surface down to the proposed packer-setting depth, to assure integrity of such casing.

(11) Sun testified that injection at a pressure equal to 0.2 psi per foot of depth to the uppermost perforation (987.6 psi) may be sufficient but requested that it be authorized to inject at higher rates to be administratively approved by the Division after step-rate tests are run by Sun and witnessed by the Division and establishing that injection under higher pressures will not damage the confining strata.

(12) The Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such high pressure will not result in migration of the injected waters from the Delaware formation.

(13) The operator should give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(14) The subject application should be approved and the project should be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Sun Exploration and Production Company, is hereby authorized to institute a pilot waterflood project on its Mobil "22" Federal Lease, as described below, by the injection of water into the Brushy Draw-Delaware Pool through its existing Mobil Federal "22" Well No. 5 located 990 feet from the South line and 2310 feet from the West line (Unit N) of Section 22, Township 26 South, Range 29 East, NMPM, Eddy County, New Mexico:

MOBIL "22" FEDERAL LEASE  
EDDY COUNTY, NEW MEXICO

TOWNSHIP 26 SOUTH, RANGE 29 EAST, NMPM  
Section 22: E/2 NW/4 and S/2

(2) Injection into said well shall be accomplished through 2 7/8-inch internally cement-lined tubing installed in a packer set at approximately 5850 feet, with injection into the perforated interval from approximately 4938 feet to 5010 feet;

PROVIDED HOWEVER THAT, the casing-tubing annulus shall be filled with an inert fluid; and a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak-detection device in order to determine leakage in the casing, tubing or packer.

PROVIDED FURTHER THAT, prior to commencing injection operations, the casing in the subject well shall be pressure-tested to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's Hobbs District Office.

(3) The injection well or system shall be equipped with a pressure-limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 987 psi.

(4) The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Delaware formation.

(5) The operator shall notify the supervisor of the Artesia District Office of the Division in advance of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(6) The operator shall immediately notify the supervisor of the Division's Artesia District Office of the failure of the tubing, casing or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(7) The subject waterflood project is hereby designated the Mobil

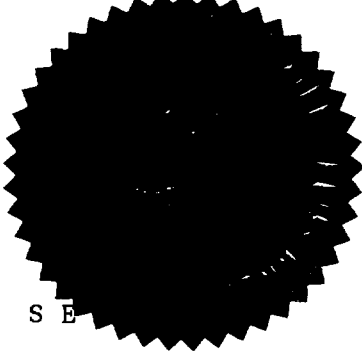
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"22" Federal Lease Waterflood Project and shall be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(8) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations. \*

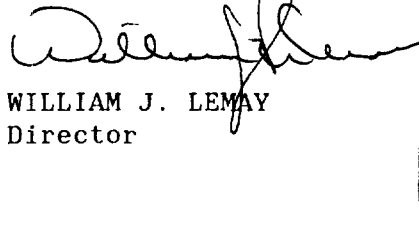
(9) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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



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STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director