

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. 9965
ORDER NO. R-9360

APPLICATION OF PHILLIPS PETROLEUM
COMPANY FOR A CARBON DIOXIDE INJECTION
PILOT PROJECT, LEA COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 13, 1990, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 14th day of November, 1990, 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, Phillips Petroleum Company, seeks authority to initiate a pilot carbon dioxide (CO₂) injection project on portions of its Leamex, Devon State and Philmex Leases underlying the following described lands in Lea County, New Mexico, by the injection of CO₂ into the Leamex-Paddock Pool through the perforated interval from approximately 6031 feet to 6063 feet in its Leamex Well No. 26 located 660 feet from the South line and 990 feet from the West line (Unit M) of Section 22, Township 17 South, Range 33 East, NMPM, Lea County, New Mexico:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 21: E/2 SE/4
Section 22: SW/4 and W/2 SE/4
Section 27: NW/4 NE/4 and N/2 NW/4
Section 28: NE/4 NE/4.

(3) The proposed carbon dioxide pilot project is of an experimental nature to determine the effectiveness of carbon dioxide injection in an area not previously subject to waterflooding, and is further designed to gather sufficient reservoir data to determine the feasibility of a full scale carbon dioxide project in this area.

(4) Testimony by the applicant further indicates that the present reservoir conditions within the Leamex-Paddock Pool in this area are especially conducive to carbon dioxide injection.

(5) The three producing wells within the proposed project area are currently marginally productive, with average production for 1990 (January through August) of approximately 15 barrels of oil per day.

(6) Approval of the proposed pilot project will allow the applicant to determine the effectiveness of carbon dioxide injection as well as the feasibility of full scale carbon dioxide injection, which, if successful, may ultimately result in the recovery of a substantial amount of otherwise unrecoverable oil, thereby preventing waste.

(7) The injection should be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 5930 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 leakage in the casing, tubing or packer.

(8) The injection wells or pressurization system for each well should be so equipped as to limit injection pressure at the wellhead to no more than 1200 psi.

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

(10) 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 higher pressure will not result in migration of the injected gases from the Paddock formation.

(11) The operator should give advance notice to the supervisor of the Hobbs 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.

(12) The operator should take all steps necessary to ensure that the injected carbon dioxide enters only the proposed injection interval and is not permitted to escape to other formations or at the surface.

(13) The project should be designated the Leamex-Devon-Philmex Cooperative Lease Pilot CO₂ Injection Project.

(14) An allowable should be assigned said project equal to the top unit allowable for the Leamex-Paddock Pool times the number of developed (production or injection) proration units within the project area.

(15) No interested party or offset operator appeared at the hearing or objected to the subject application.

(16) 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.

(17) Furthermore, an administrative procedure should be adopted for authority to expand said project with additional CO₂ injection wells.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Phillips Petroleum Company, is hereby authorized to institute and conduct a pilot carbon dioxide (CO₂) injection project on portions of its Leamex, Devon State, and Philmex Leases underlying the following described lands in Lea County, New Mexico, by the injection of CO₂ into the Leamex-Paddock Pool through its Leamex Well No. 26 located 660 feet from the South line and 990 feet from the West line (Unit M) of Section 22, Township 17 South, Range 33 East, NMPM, Lea County, New Mexico:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

Section 21: E/2 SE/4
Section 22: SW/4 and W/2 SE/4
Section 27: NW/4 NE/4 and N/2 NW/4
Section 28: NE/4 NE/4.

(2) Injection into said well shall be accomplished through 2 3/8-inch plastic-coated tubing installed in a packer set at approximately 5930 feet, with injection into the perforated interval from approximately 6031 feet to 6063 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 1200 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 Leamex-Paddock Pool.

(5) The operator shall notify the supervisor of the Hobbs 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 Hobbs District Office of the failure of the tubing, casing or packer, in said well or the leakage of CO₂ 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 CO₂ injection project is hereby designated the Leamex-Devon-Phillex Cooperative Lease Pilot CO₂ Injection Project. and shall be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

(8) The project allowable shall be equal to top unit allowable for the Leamex-Paddock Pool times the number of developed (production or injection) proration units within the project area.

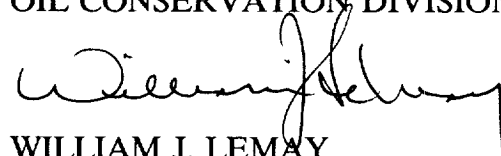
(9) The Division Director shall have authority to grant administrative approval to expand said project with additional wells provided that any such well is necessary to develop or maintain efficient CO₂ injection and provided that no objections are received pursuant to General Rule 701.B.

(10) Monthly progress reports of the enhanced recovery project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

(11) 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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