

**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. 12785
ORDER NO. R-11744**

**APPLICATION OF APACHE CORPORATION FOR APPROVAL OF A
WATERFLOOD PROJECT, LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on January 10, 2002, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 11th day of March, 2002, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) The applicant, Apache Corporation ("Apache"), seeks authority to institute a waterflood project within the Penrose Skelly (Grayburg) Pool comprising the SE/4 of Section 8, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, on its Grizzell Lease by the injection of water into the Grayburg formation within its Grizzell Well No. 11 (API No. 30-025-24972) located 1300 feet from the South line and 1139 feet from the East line (Unit P) of Section 8, through the perforated interval from approximately 3,624 feet to 3,680 feet.

(3) Apache presented testimony to the effect that the proposed waterflood project area comprises a single fee lease, and that the interest ownership within the project area is uniform throughout.

(4) Apache presented geologic evidence that demonstrates:

(a) the proposed waterflood project is located within the Penrose Skelly (Grayburg) Pool;

- (b) injection into the Grizzell No. 11 will be confined to the Upper Grayburg formation, being the same interval that is being produced in four producing wells within the project area; and
 - (c) the Upper Grayburg interval is laterally continuous throughout the proposed project area.
- (5) Apache presented engineering evidence that demonstrates:
- (a) it will initially utilize four producing wells and one injection well within the waterflood project. The producing wells are the Grizzell Wells No. 1, 2, 3 and 4, located respectively in Units J, I, P, and O of Section 8;
 - (b) the producing wells within the proposed project area are in an advanced state of depletion within the Penrose Skelly (Grayburg) Pool;
 - (c) the original oil in place underlying the SE/4 of Section 8 is calculated to be approximately 2.4 million barrels. To date, the wells in the project area have produced, by primary means, approximately 414,000 barrels of oil;
 - (d) an additional 100,000 barrels of oil may be recovered from the proposed project area by the initiation of waterflood operations; and
 - (e) project costs to implement waterflood operations within the proposed project area are estimated to be approximately \$240,000.
- (6) Approval of the proposed waterflood project should result in the recovery of additional hydrocarbons from the Grayburg formation of the Penrose Skelly (Grayburg) Pool that may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.
- (7) The proposed waterflood project should be approved and the project should be governed by Division Rules No. 701 through 708.

IT IS THEREFORE ORDERED THAT :

(1) Apache Corporation is hereby authorized to institute a waterflood project within the Penrose Skelly (Grayburg) Pool on its Grizzell Lease comprising the SE/4 of Section 8, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, by the injection of water into the Grayburg formation within its Grizzell Well No. 11 (API No. 30-025-24972) located 1300 feet from the South line and 1139 feet from the East line (Unit P) of Section 8, through the perforated interval from approximately 3,624 feet to 3,680 feet.

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

(3) Injection shall be accomplished through 2 3/8 inch internally plastic-lined tubing installed in a packer set at approximately 3,524 feet. The casing-tubing annulus shall be filled with an inert fluid and a gauge or approved leak-detection device shall be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(4) The injection well or pressurization system shall be equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to no more than 725 psi.

(5) The Division Director may administratively authorize a pressure limitation in excess of the above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(6) Prior to commencing injection operations, the casing shall be pressure tested throughout the interval from the surface down to the proposed packer setting depth to assure the integrity of such casing.

(7) The operator shall give advance notice to the Supervisor of the Division's Hobbs District Office of the date and time injection equipment will be installed and the mechanical integrity pressure test will be conducted on the Grizzell No. 11, so these operations may be witnessed.

(8) The operator shall immediately notify the Supervisor of the Division's Hobbs District Office of the failure of the tubing, casing or packer in the injection well or the leakage of water, oil or gas from or around any producing or plugged and abandoned well within the project area, and shall take all steps as may be timely and necessary to correct such failure or leakage.

(9) The project is hereby designated the Grizzell Penrose Skelly Waterflood Project, and the applicant shall conduct injection operations in accordance with Division Rules No. 701 through 708, and shall submit monthly progress reports in accordance with Division Rules No. 706 and 1115.

(10) The injection authority granted herein for the Grizzell No. 11 shall terminate one year after the date of this order if the operator has not commenced injection operations into the well; provided, however, the Division, upon written request by the operator, may grant an extension for good cause.

(11) Jurisdiction is hereby 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

LORI WROTENBERY
Director

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