

**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. 10846  
Order No. R-10020**

**APPLICATION OF PHILLIPS PETROLEUM  
COMPANY FOR APPROVAL OF A WATERFLOOD  
PROJECT, AND TO QUALIFY SAID PROJECT  
FOR THE RECOVERED OIL TAX RATE PURSUANT  
TO THE "NEW MEXICO ENHANCED OIL RECOVERY  
ACT", LEA COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This cause came on for hearing at 8:15 a.m. on October 7, 1993, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 23rd day of November, 1993, 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. 10845 and 10846 were consolidated at the time of the hearing for the purpose of testimony.

(3) The applicant, Phillips Petroleum Company (Phillips), seeks authority to institute a waterflood project in its Vacuum Glorieta East Unit by the injection of water into the Glorieta and Paddock formations, Vacuum-Glorieta Pool, Lea County, New Mexico, through the gross perforated and/or open hole interval from approximately 5,983 feet to 6,202 feet in nine existing and thirty-nine wells to be drilled at orthodox and unorthodox locations as shown on Exhibit "A" attached hereto.

(4) By Order No. R-10017 issued in Case No. 10845 on November 16, 1993, the Division, upon application of Phillips, approved the Vacuum Glorieta East Unit which comprises some 4,239.80 acres, more or less, in Townships 17 and 18 South, Range 35 East, NMPM, Lea County, New Mexico, described as follows:

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 26: N/2 NW/4, SW/4 NW/4, NW/4 SW/4

Section 27: All

Section 28: E/2, SW/4, S/2 NW/4, NE/4 NW/4

Section 29: S/2, S/2 N/2

Section 30: SE/4, S/2 NE/4, E/2 SW/4, SE/4 NW/4

Section 31: E/2, E/2 W/2

Section 32: All

Section 33: N/2, N/2 S/2, SW/4 SW/4

Section 34: W/2 NW/4, NE/4 NW/4, NW/4 SW/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 5: N/2 N/2 (Lots 1, 2, 3 and 4), SW/4 NW/4

(5) The western boundary of the Vacuum Glorieta East Unit is contiguous with the eastern boundary of the Texaco Exploration & Production Inc. Vacuum Glorieta West Unit and Waterflood Project which were approved by Division Order Nos. R-9714 and R-9710, respectively.

(6) The vast majority of wells located within the applicant's Vacuum Glorieta East Unit Area are in an advanced state of depletion and should properly be classified as "stripper wells".

(7) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(8) Applicant estimates that secondary recovery operations within the Vacuum Glorieta East Unit Area will result in the recovery of an additional 16.4 million barrels of oil.

(9) The Vacuum Glorieta East Unit Waterflood Project will be developed on a 40-acre five spot injection pattern which will involve drilling eight new producing wells, thirty-three new injection wells, the conversion of fifteen existing wells to injection, and the reactivation of nine shut-in producing wells.

(10) The applicant should 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.

(11) The injection of water into each of the wells shown on Exhibit "A" should be accomplished through internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation or casing shoe; the casing-tubing annulus should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(12) Prior to commencing injection operations into the wells shown on Exhibit "A", the casing in each well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth to assure the integrity of such casing.

(13) The injection wells or pressurization system should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 1200 psi.

(14) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the pressure limitation described in Finding No. (13) above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(15) There are six wells, shown on Exhibit "B" attached hereto, which are located within the "area of review" which may not be cemented in a manner adequate to confine the injected fluid to the proposed injection interval.

(16) Prior to initiating injection operations within one-half mile of any of the wells shown on Exhibit "B", the applicant should be required to either demonstrate to the supervisor of the Division's Hobbs district office that the subject wells are completed and cemented adequately to confine the injected fluid to the injection zone, or perform remedial cement operations in a manner acceptable to the Division.

(17) Prior to commencing injection operations into the proposed Vacuum Glorieta East Unit Well Nos. 03W02, 08W02, 16W04, 20W02, 23W03, and 30W02, the applicant should be required to submit to the Santa Fe Office of the Division an executed copy of an Injection Lease-Line Agreement.

(18) The operator should give advance notification to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment, the conductance of any remedial cement operations, and of the mechanical integrity pressure tests in order that the same may be witnessed.

(19) The application should be approved and the project should be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(20) At the time of the hearing, the applicant requested that the subject waterflood be certified by the Division as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(21) The evidence presented indicates that the subject waterflood meets all the criteria for certification.

(22) Implementation of secondary recovery operations within the Vacuum Glorieta East Unit will occur in three phases. Phase I is to be implemented in 1994, Phase II in 1995 and Phase III in 1996.

(23) The certified "project area" should initially comprise the area within the Vacuum Glorieta East Unit, described in Finding No. (4) above, provided however, the "project area" and/or the producing wells eligible for the recovered oil tax rate may be contracted and reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

(24) To be eligible for the EOR credit, the operator should advise the Division when water injection commences within Phase I, II and III and, at such time, request the Division certify such phases or areas to the New Mexico Taxation and Revenue Department.

(25) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to The Department of Taxation and Revenue those lands and wells which are eligible for the credit.

**IT IS THEREFORE ORDERED THAT:**

(1) The applicant, Phillips Petroleum Company, is hereby authorized to institute a waterflood project in its Vacuum Glorieta East Unit by the injection of water into the Glorieta and Paddock formations, Vacuum-Glorieta Pool, Lea County, New Mexico, through the gross perforated and/or open hole interval from approximately 5,983 feet to 6,202 feet in nine existing and thirty-nine wells to be drilled at orthodox and unorthodox locations as shown on Exhibit "A" attached hereto.

(2) The applicant 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 into the wells shown on Exhibit "A" shall be accomplished through plastic-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation or casing shoe; 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 wells or pressurization system shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 1200 psi.

(5) The Division Director shall have the authority to 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 into the wells shown on Exhibit "A", the casing in each well 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) Prior to initiating injection operations within one-half mile of any of the wells shown on Exhibit "B", the applicant shall either demonstrate to the supervisor of the Division's Hobbs district office that the subject wells are completed and cemented adequately to confine the injected fluid to the injection zone, or perform remedial cement operations in a manner acceptable to the Division.

(8) Prior to commencing injection operations into the proposed Vacuum Glorieta East Unit Well Nos. 03W02, 08W02, 16W04, 20W02, 23W03, and 30W02, the applicant shall submit to the Santa Fe Office of the Division an executed copy of an Injection Lease-Line Agreement.

(9) The operator shall give advance notification to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment, the conductance of remedial cement operations, and of the mechanical integrity pressure tests, in order that the same may be witnessed.

(10) The applicant shall immediately notify the supervisor of the Hobbs District Office of the Division of the failure of the tubing, casing or packer in any of the 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 steps as may be timely and necessary to correct such failure or leakage.

(11) The subject waterflood is hereby designated the Vacuum Glorieta East Unit Waterflood Project and shall be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

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

(13) The applicant shall be required to obtain Division approval, subsequent to the entry of this order, to drill any injection well located at an unorthodox location closer than 330 feet from the outer boundary of the Vacuum Glorieta East Unit.

(14) The subject waterflood is hereby certified as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(15) The certified "project area" shall initially coincide with the Vacuum Glorieta East Unit Area, described in Finding No. (4) above, provided however, the "project area" and/or the producing wells eligible for the recovered oil tax rate may be contracted and reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

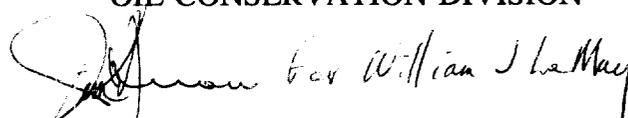
(16) To be eligible for the EOR credit, the operator shall advise the Division when water injection commences within Phase I, II and III and at such time, request the Division certify such phases or areas to the New Mexico Taxation and Revenue Department.

(17) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to The Department of Taxation and Revenue those lands and wells which are eligible for the credit.

(18) 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

A handwritten signature in black ink, appearing to read "William J. LeMay", is written over a faint, illegible stamp or background.

WILLIAM J. LeMAY  
Director

S E A L

**Exhibit "A"**  
**Case No. 10846**  
**Division Order No. R-10020**  
**Vacuum Glorieta East Unit**  
**Approved Injection Wells**  
**Existing Wells**

Operator	Lease Name & Well No.	Location	Unit	STR	VGEU Well No.
Exxon Company USA	N.M. "K" State No. 34	1286' FSL - 1333' FWL	N	28-17S-35E	01-05
Exxon Company USA	N.M. "K" State No. 35	1195' FSL - 2518' FEL	O	28-17S-35E	01-06
Shell Western E & P, Inc.	State "T" No. 10	2310' FSL - 1980' FEL	J	33-17S-35E	06-01
Phillips Petroleum Company	Santa Fe No. 109	2323' FNL - 2213' FEL	G	29-17S-35E	14-01
Marathon Oil Company	Warn State AC 3 No. 8	1650' FNL - 990' FEL	H	33-17S-35E	24-01
Chevron USA, Inc.	State 4-27 No. 10	1650' FSL - 330' FWL	L	27-17S-35E	27-01
Phillips Petroleum Company	Santa Fe No. 106	2323' FNL - 660' FEL	H	29-17S-35E	32-01
Phillips Petroleum Company	Santa Fe No. 105	2322' FNL - 660' FWL	E	28-17S-35E	41-02
Phillips Petroleum Company	Santa Fe No. 92	2105' FSL - 1980' FWL	K	33-17S-35E	43-01

**Exhibit "A"**  
**Case No. 10846**  
**Division Order No. R-10020**  
**Vacuum Glorieta East Unit**  
**Approved Injection Wells**  
**New Wells**

**Infill Producing Wells Converted to Injection Wells**

Lease Name & Well No.	Location	Unit	STR	VGEU Well No.
New Mexico K State	1320' FSL - 1320' FEL		28-17S-35E	01-13
New Mexico K State	1200' FNL - 1320' FEL		32-17S-35E	02-11
State M	1330' FSL - 1330' FEL	J	29-17S-35E	05-06
Warn State AC 3	1330' FNL - 2640' FWL		33-17S-35E	24-06
State 5 27	1500' FNL - 1320' FWL		27-17S-35E	26-06
Santa Fe	1320' FSL - 1330' FWL		29-17S-35E	29-02
<b>Infill Injection Wells</b>				
New Mexico State K	1320' FSL - 100' FWL		28-17S-35E	01W12
New Mexico State K	100' FSL - 1320' FWL		28-17S-35E	01W14
New Mexico State K	100' FSL - 1320' FEL		28-17S-35E	01W15
New Mexico State K	1320' FNL - 2650' FWL		32-17S-35E	02W09
New Mexico State K	2640' FNL - 1320' FEL		32-17S-35E	02W12

Lease Name & Well No.	Location	Unit	STR	VGEU Well No.
Skelly J State	50' FNL - 1370' FWL	C	31-17S-35E	03W02
Skelly P State	1200' FNL - 100 FWL	D	33-17S-35E	04W03
Skelly P State	1310' FNL - 1320' FWL		33-17S-35E	04W04
State M	1320' FSL - 2650' FWL		29-17S-35E	05W05
State M	100' FSL - 2650' FWL	O	29-17S-35E	05W07
State M	100' FSL - 1320' FEL		29-17S-35E	05W08
State F	50' FSL - 1370' FWL	N	31-17S-35E	08W02
State B	1320' FSL - 1310' FEL		30-17S-35E	09W03
State B	100' FSL - 1310' FEL	P	30-17S-35E	09W04
State N	1500' FNL - 1320' FEL		28-17S-35E	10W04
State N	2630' FNL - 2650' FWL	G	28-17S-35E	10W05
State N	2630' FNL - 1320' FEL		28-17S-35E	10W06
Santa Fe	2650' FNL - 2650' FWL	J	30-17S-35E	15W03
Santa Fe	1320' FSL - 2650' FWL		30-17S-35E	15W04
Santa Fe	100' FSL - 2650' FWL	O	30-17S-35E	15W05
Santa Fe	660' FNL - 50' FWL	D	5-18S-35E	16W04
State B 1578	2510' FSL - 1370' FWL	K	30-17S-35E	20W02
Warn State AC1	2640' FNL - 1370' FWL		31-17S-35E	23W03

Lease Name & Well No.	Location	Unit	STR	VGEU Well No.
State 3-32	1320' FNL - 1320' FWL		32-17S-35E	25W06
State 5-27	2630' FNL - 1320' FWL		27-17S-35E	26W07
Santa Fe	50' FSL - 1370' FEL	O	31-17S-35E	30W02
State H	1330' FSL - 100' FWL	L	29-17S-35E	36W02
State F	100' FSL - 100' FWL	M	29-17S-35E	38W03
State F	100' FSL - 1320' FWL		29-17S-35E	38W04
Santa Fe	2640' FNL - 100' FWL		33-17S-35E	42W03
State L DE	1330' FNL - 2650' FWL	G	30-17S-35E	45W02
State CG NCT-2	1980' FNL - 1980' FWL	F	29-17S-35E	46W01
State CG NCT-1	1980' FNL - 660' FEL	H	30-17S-35E	47W01

Exhibit "B"  
Case No. 10846  
Division Order No. R-10020  
Inadequately Cemented Wells

Well Name & No.	Location	Unit	S-T-R
Vacuum Abo Unit Tract 14 No. 3	660' FSL - 1980' FWL	N	5-18S-35E
Vacuum Abo Unit Tract 14 No. 2	660' FSL - 660' FWL	M	5-18S-35E
Vacuum Abo Unit Tract 9 No. 5	2310' FNL - 330' FEL	H	33-17S-35E
Santa Fe No. 125	660' FSL - 1820' FWL	N	20-17S-35E
NM "AB" State No. 4	1650' FSL - 660' FEL	I	6-18S-35E
State "E" No. 2	660' FSL - 1700' FWL	N	31-17S-35E