



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

3824

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

RECEIVED

MAR 30 1997

ADMINISTRATIVE ORDER NO. WFX-708

**APPLICATION OF DEVON ENERGY CORPORATION TO EXPAND ITS WATERFLOOD
PROJECT IN THE RED LAKE QUEEN-GRAYBURG-SAN ANDRES POOL IN EDDY
COUNTY, NEW MEXICO**

**ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Division Order No. R-3469 as amended, Devon Energy Corporation has made application to the Division on February 3, 1997 for permission to expand its West Red Lake Waterflood Project in the Red Lake Queen-Grayburg-San Andres Pool in Eddy County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

- (1) The application has been filed in due form.
- (2) Satisfactory information has been provided that all offset operators have been duly notified of the application.
- (3) No objection has been received within the waiting period as prescribed by Rule 701(B).
- (4) The proposed injection wells are eligible for conversion to injection under the terms of Rule 701.
- (5) The proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.
- (6) The application should be approved.

IT IS THEREFORE ORDERED THAT:

The applicant, Devon Energy Corporation, be and the same is hereby authorized to inject water into the San Andres formation at approximately 1268 feet to approximately 2104 feet through 2 3/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the wells described on Exhibit "A" attached hereto, for purposes of secondary recovery.

IT IS FURTHER ORDERED THAT:

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.

Prior to commencing injection operations into West Red Lake Unit Well Nos. 36, 71, and 74, Grayburg and/or Premier interval perforations shall be cement squeezed and pressure tested in a manner satisfactory to the supervisor of the Artesia District Office of the Division. Specific intervals are indicated on Exhibit "A".

Prior to commencing injection operations into the wells, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection wells to range from .6 to .9 psi per foot of depth to the uppermost injection perforations of each well as indicated on Exhibit "A".

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said wells that such higher pressure will not result in migration of the injected fluid from the San Andres formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify 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 tests so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Artesia district office of the Division of the failure of the tubing, casing or packer in said wells and shall take such steps as may be timely and necessary to correct such failure or leakage.

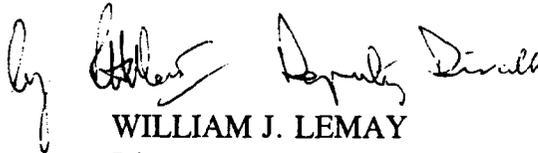
The subject wells shall be governed by all provisions of Division Order No. R-3469, as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

PROVIDED FURTHER THAT, jurisdiction of this cause is hereby retained by the Division for the entry of such further order or orders as may be deemed necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

DONE at Santa Fe, New Mexico, on this 12th day of March, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director

S E A L

cc: Oil Conservation Division - Artesia
Case File No.3824

EXHIBIT "A"
DIVISION ORDER NO. WFX-708
WEST RED LAKE UNIT WATERFLOOD PROJECT
APPROVED INJECTION WELLS

Well Name	Well No.	Location	Unit	S.T.R.	Interval to Squeeze	Injection Interval	Packer Depth	Tubing Size	Pressure Gradient	Injection Pressure
West Red Lake Unit	26	2340' FSL & 400' FEL	I	8-18S-27E	N/A	1972'-2081'	1875'	2 3/8"	.75 psi/ft	1479 PSIG
West Red Lake Unit	36	1630' FNL & 330' FEL	H	36-18S-27E	1290'-1298'	1657'-2104'	1575'	2 3/8"	.71 psi/ft	1176 PSIG
West Red Lake Unit	47	2310' FNL & 1510' FEL	G	8-18S-27E	N/A	1656'-2068'	1575'	2 3/8"	.60 psi/ft	994 PSIG
West Red Lake Unit	63	1500' FNL & 850' FEL	H	8-18S-27E	N/A	1656'-2065'	1575'	2 3/8"	.75 psi/ft	1242 PSIG
West Red Lake Unit	71	710' FNL & 1650' FEL	B	8-18S-27E	1194'-1196'	1268'-1996'	1200'	2 3/8"	.72 psi/ft	913 PSIG
West Red Lake Unit	74	1930' FNL & 2600' FEL	G	8-18S-27E	1196'-1225'	1517'-1996'	1450'	2 3/8"	.90 psi/ft	1365 PSIG

All wells in Eddy County, New Mexico



ADMINISTRATIVE ORDER NO. WFX-719

**APPLICATION OF DEVON ENERGY CORPORATION TO EXPAND ITS WATERFLOOD
PROJECT IN THE RED LAKE QUEEN-GRAYBURG-SAN ANDRES POOL IN EDDY
COUNTY, NEW MEXICO**

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Division Order No. R-3469 as amended, Devon Energy Corporation has made application to the Division on May 6, 1997 for permission to expand its West Red Lake Waterflood Project in the Red Lake Queen-Grayburg-San Andres Pool in Eddy County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

- (1) The application has been filed in due form.
- (2) Satisfactory information has been provided that all offset operators have been duly notified of the application.
- (3) No objection has been received within the waiting period as prescribed by Rule 701(B).
- (4) The proposed injection wells are eligible for conversion to injection under the terms of Rule 701.
- (5) The proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.
- (6) The application should be approved.

IT IS THEREFORE ORDERED THAT:

The applicant, Devon Energy Corporation, be and the same is hereby authorized to inject water into the San Andres formation at approximately 1208 feet to approximately 2132 feet through 2 3/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the wells described on Exhibit "A" attached hereto, for purposes of secondary recovery.

IT IS FURTHER ORDERED THAT:

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.

Prior to commencing injection operations into the wells, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection wells to range from .58 to .86 psi per foot of depth to the uppermost injection perforations of each well as indicated on Exhibit 'A'.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said wells that such higher pressure will not result in migration of the injected fluid from the San Andres formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify 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 tests so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Artesia district office of the Division of the failure of the tubing, casing or packer in said wells and shall take such steps as may be timely and necessary to correct such failure or leakage.

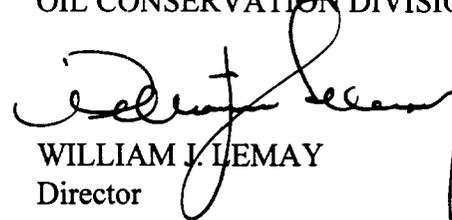
The subject wells shall be governed by all provisions of Division Order No. R-3469, as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

PROVIDED FURTHER THAT, jurisdiction of this cause is hereby retained by the Division for the entry of such further order or orders as may be deemed necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

DONE at Santa Fe, New Mexico, on this 1st day of August, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

WJL/BES/lis

cc: Oil Conservation Division - Artesia
Case File No.3824 /

EXHIBIT "A"
DIVISION ORDER NO. WFX-719
WEST RED LAKE UNIT WATERFLOOD PROJECT
APPROVED INJECTION WELLS

<i>Well Name</i>	<i>Well No.</i>	<i>Location</i>	<i>Unit</i>	<i>S-T-R</i>	<i>Injection Interval</i>	<i>Packer Depth</i>	<i>Tubing Size</i>	<i>Pressure Gradient</i>	<i>Injection Pressure</i>
West Red Lake Unit	18	660' FNL & 660' FWL	D	8-18S-27E	1690'-1990'	1600'	2 3/8"	.66 psi/ft	1115 PSIG
West Red Lake Unit	25	250' FNL & 990' FEL	A	8-18S-27E	1750'-2050'	1675'	2 3/8"	.58 psi/ft	1015 PSIG
West Red Lake Unit	35	330' FNL & 240' FWL	D	9-18S-27E	1863'-2088'	1825'	2 3/8"	.60 psi/ft	1118 PSIG
West Red Lake Unit	50	990' FNL & 1650' FWL	C	8-18S-27E	1644'-1928'	1550'	2 3/8"	.86 psi/ft	1414 PSIG
West Red Lake Unit	62	990' FNL & 990' FWL	D	9-18S-27E	1894'-2132'	1800'	2 3/8"	.60 psi/ft	1136 PSIG
West Red Lake Unit	72	1400' FNL & 2100' FWL	F	8-18S-27E	1208'-1960'	1150'	2 3/8"	.69 psi/ft	834 PSIG

All wells in Eddy County, New Mexico



ADMINISTRATIVE ORDER NO. WFX-747

**APPLICATION OF DEVON ENERGY CORPORATION TO EXPAND ITS WATERFLOOD
PROJECT IN THE RED LAKE QUEEN-GRAYBURG-SAN ANDRES POOL IN EDDY
COUNTY, NEW MEXICO**

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Division Order No. R-3469 as amended, Devon Energy Corporation has made application to the Division on November 30, 1998 for permission to expand its West Red Lake Waterflood Project in the Red Lake Queen-Grayburg-San Andres Pool in Eddy County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

- (1) The application has been filed in due form.
- (2) Satisfactory information has been provided that all offset operators have been duly notified of the application.
- (3) No objection has been received within the waiting period as prescribed by Rule 701(B).
- (4) The proposed injection wells are eligible for conversion to injection under the terms of Rule 701.
- (5) The proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.
- (6) The application should be approved.

IT IS THEREFORE ORDERED THAT:

The applicant, Devon Energy Corporation, be and the same is hereby authorized to inject water into the San Andres formation at approximately 1520 feet to approximately 2240 feet through 2 3/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the wells described on Exhibit "A" attached hereto, for purposes of secondary recovery.

IT IS FURTHER ORDERED THAT:

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.

Prior to commencing injection operations into the wells, the operator shall either 1) provide evidence of proper cementing or, 2) perform cement squeeze operations on the Julia 'A' Federal Well No.2, located in Unit Letter 'P' of Section 5, Township 18 South, Range 27 East, so as to confirm or establish cement across the proposed injection interval.

Prior to commencing injection operations into the wells, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection wells to range from .5 to .8 psi per foot of depth to the uppermost injection perforations of each well as indicated on Exhibit 'A'.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said wells that such higher pressure will not result in migration of the injected fluid from the San Andres formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify 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 tests so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Artesia district office of the Division of the failure of the tubing, casing or packer in said wells and shall take such steps as may be timely and necessary to correct such failure or leakage.

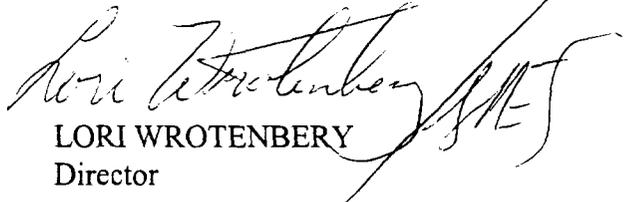
The subject wells shall be governed by all provisions of Division Order No. R-3469, as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

PROVIDED FURTHER THAT, jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh water or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

DONE at Santa Fe, New Mexico, on this 19th day of January, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


LORI WROTENBERY
Director

S E A L

LW/BES/kv

cc: Oil Conservation Division - Artesia
Case File No.3824

EXHIBIT "A"

DIVISION ORDER NO. WFX-747
WEST RED LAKE UNIT WATERFLOOD PROJECT
 APPROVED INJECTION WELLS

<i>Well Name</i>	<i>Well No.</i>	<i>Location</i>	<i>Unit</i>	<i>S-T-R</i>	<i>Injection Interval</i>	<i>Packer Depth</i>	<i>Tubing Size</i>	<i>Pressure Gradient</i>	<i>Injection Pressure</i>
West Red Lake Unit	1	810' FSL & 960' FWL	M	6-18S-27E	1520'-1770'	1450'	2 3/8"	.70 psi/ft	1064 PSIG
West Red Lake Unit	3	660' FNL & 1980' FWL	C	7-18S-27E	1588'-1784'	1500'	2 3/8"	.75 psi/ft	1191 PSIG
West Red Lake Unit	9	2310' FSL & 2026' FEL	J	7-18S-27E	1550'-1730'	1475'	2 3/8"	.65 psi/ft	1008 PSIG
West Red Lake Unit	12	990' FSL & 990' FEL	P	6-18S-27E	1740'-1850'	1675'	2 3/8"	.70 psi/ft	1218 PSIG
West Red Lake Unit	29	1592' FSL & 2302' FWL	K	4-18S-27E	1960'-2200'	1900'	2 3/8"	.50 psi/ft	980 PSIG
West Red Lake Unit	37	1490' FNL & 2050' FWL	F	7-18S-27E	1535'-1822'	1450'	2 3/8"	.80 psi/ft	1228 PSIG
West Red Lake Unit	43	680' FSL & 1650' FWL	N	4-18S-27E	1805'-2194'	1725'	2 3/8"	.65 psi/ft	1173 PSIG
West Red Lake Unit	45	990' FSL & 330' FWL	M	4-18S-27E	1723'-2130'	1650'	2 3/8"	.65 psi/ft	1120 PSIG
West Red Lake Unit	49	2310' FSL & 1750' FWL	K	4-18S-27E	1724'-2180'	1650'	2 3/8"	.70 psi/ft	1207 PSIG
West Red Lake Unit	61	330' FNL & 2310' FWL	C	9-18S-27E	1812'-2249'	1725'	2 3/8"	.60 psi/ft	1087 PSIG
West Red Lake Unit	78	2530' FNL & 1500' FWL	F	8-18S-27E	1540'-1949'	1475'	2 3/8"	.75 psi/ft	1155 PSIG

All wells in Eddy County, New Mexico