



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

W 3599

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

MAY - 1 1997

ADMINISTRATIVE ORDER NO. WFX-710

**APPLICATION OF DEVON ENERGY CORPORATION TO EXPAND ITS WATERFLOOD
PROJECT IN THE GRAYBURG-JACKSON POOL IN EDDY COUNTY, NEW MEXICO**

**ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Division Order No. R-3265 as amended, Devon Energy Corporation has made application to the Division on January 6, 1997 for permission to expand its Hudson Waterflood Project in the Grayburg-Jackson 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 Grayburg and San Andres formations at approximately 2700 feet to approximately 3510 feet through 2 3/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the following described wells, for purposes of secondary recovery to wit:

Hudson Federal Well No.3
1650' FNL & 330' FWL
UL 'E', Section 17, Township 17 South, Range 31 East,
Injection Interval Approximately: 2700 feet to 3497 feet
Maximum Injection Pressure: 1350 psig

Hudson Federal Well No.4
990' FNL & 330' FWL
UL 'D', Section 17, Township 17 South, Range 31 East,
Injection Interval Approximately: 2700 feet to 3500 feet
Maximum Injection Pressure: 1350 psig

Hudson Federal Well No.5
1980' FNL & 860' FWL
Section 17, Township 17 South, Range 31 East,
Injection Interval Approximately: 2750 feet to 3510 feet
Maximum Injection Pressure: 1375 psig

All wells NMPM, Eddy County, New Mexico.

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 well, 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 no greater than .5 psi per foot of depth to the uppermost injection perforations.

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 Grayburg or San Andres formations. 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.

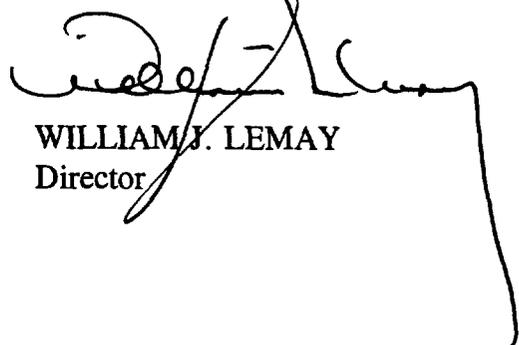
The subject wells shall be governed by all provisions of Division Order No. R-3265 as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

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 16th day of April, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

WJL/BES

cc: Oil Conservation Division - Artesia
Case File No. 3599



ADMINISTRATIVE ORDER NO. WFX-723

***APPLICATION OF THE WISER OIL COMPANY TO EXPAND ITS WATERFLOOD
PROJECT IN THE GRAYBURG-JACKSON POOL IN EDDY COUNTY, NEW MEXICO.***

**ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Division Order No. R-3952 as amended, The Wisser Oil Company has made application to the Division on August 18, 1997 for permission to expand its Lea 'D' Unit Waterflood Project in the Grayburg-Jackson 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, The Wisser Oil Company, be and the same is hereby authorized to inject water into the Grayburg and San Andres formations at approximately 3350 feet to approximately 3850 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 no more than .2 psi per foot of depth to the uppermost injection perforation.

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 Grayburg or San Andres formations. 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.

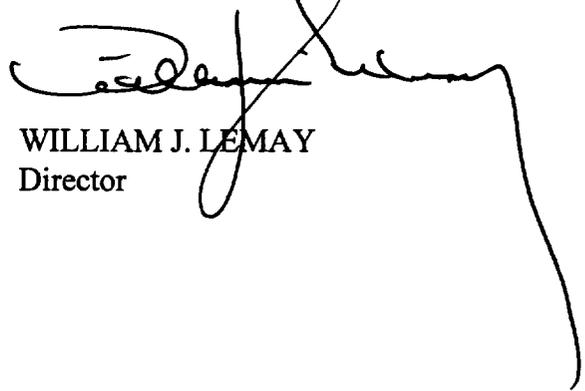
The subject wells shall be governed by all provisions of Division Order Nos. R-3952 as amended, and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

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 30th day of October, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

cc: Oil Conservation Division - Artesia
Ms. Bonnie Jones, J.O. Easley, Inc.
Files: Case No.4338

EXHIBIT "A"

DIVISION ORDER NO. WFX-723
LEA 'D' WATERFLOOD PROJECT
 APPROVED INJECTION WELLS

Well Name	Well	Location	Unit	S.T.R.	Injection Perforations	Packer Depth	Tubing	Pressure
Lea 'D' Unit	1	660' FNL & 1980' FEL	B	26-T17S-R31E	3366' - 3782'	3217'	2 3/8"	673 PSIG
Lea 'D' Unit	2	710' FNL & 660' FEL	A	26-T17S-R31E	To Be Determined	TBD*	2 3/8"	.2 psi/ft
Lea 'D' Unit	3	1980' FNL & 660' FEL	H	26-T17S-R31E	3744' - 3810'	3692'	2 3/8"	749 PSIG
Lea 'D' Unit	4	1880' FNL & 1980' FEL	G	26-T17S-R31E	To Be Determined	TBD*	2 3/8"	.2 psi/ft
Lea 'D' Unit	5	1980' FSL & 660' FEL	I	26-T17S-R31E	To Be Determined	TBD*	2 3/8"	.2 psi/ft
Lea 'D' Unit	6	1980' FSL & 1980' FEL	J	26-T17S-R31E	3472' - 3813'	3384'	2 3/8"	694 PSIG
Lea 'D' Unit	7	1980' FNL & 1980' FWL	F	26-T17S-R31E	To Be Determined	TBD*	2 3/8"	.2 psi/ft
Lea 'D' Unit	8	1980' FNL & 660' FWL	E	26-T17S-R31E	To Be Determined	TBD*	2 3/8"	.2 psi/ft

All wells located in Eddy County, New Mexico

* TBD – Located within 100 feet of the uppermost injection perforations or open-hole interval.



ADMINISTRATIVE ORDER NO. WFX-725

**APPLICATION OF DEVON ENERGY CORPORATION TO EXPAND ITS WATERFLOOD
PROJECT IN THE GRAYBURG-JACKSON POOL IN EDDY COUNTY, NEW MEXICO**

**ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Division Order No. R-3265 as amended, Devon Energy Corporation has made application to the Division on September 26, 1997 for permission to expand its Hudson Waterflood Project in the Grayburg-Jackson Pool in Eddy County, New Mexico.

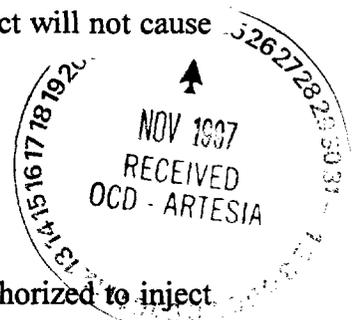
THE DIVISION DIRECTOR FINDS THAT:

- (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 Grayburg and San Andres formations at approximately 2806 feet to approximately 3717 feet through 2 3/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the following described well, for purposes of secondary recovery to wit:



Hudson Federal Well No.9
API No.30-015-28790
2310' FNL & 110' FEL
UL 'F', Section 18, Township 17 South, Range 31 East,
Injection Interval Approximately: 2806 feet to 3717 feet
Maximum Injection Pressure: 1403 psig

Located in Eddy County, New Mexico.

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 well, 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 no greater than .5 psi per foot of depth to the uppermost injection perforations.

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 Grayburg or San Andres formations. 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 well and shall take such steps as may be timely and necessary to correct such failure or leakage.

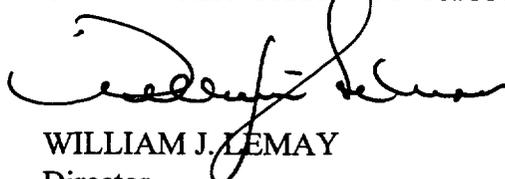
The subject well shall be governed by all provisions of Division Order No. R-3265 as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

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 30th day of October, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

WJL/BES

cc: Oil Conservation Division - Artesia
Case File No.3599 ✓



ADMINISTRATIVE ORDER NO. WFX-726

**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 September 22, 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 1247 feet to approximately 2025 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 .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.

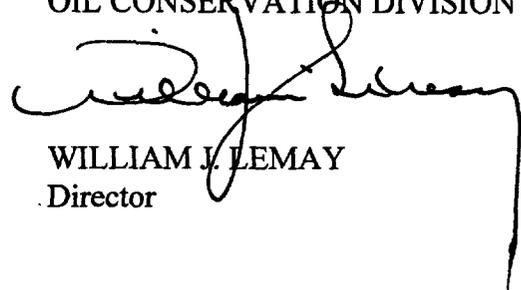
The subject wells shall be governed by all provisions of Division Order No. R-3469, as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

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 17th day of November, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

WJL/BES/kv

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

EXHIBIT "A"

DIVISION ORDER NO. WFX-726
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	7	990' FNL & 1980' FWL	B	7-18S-27E	1714'-1684'	1665'	2 3/8"	.60 psi/ft	1028 PSIG
West Red Lake Unit	15	2310' FNL & 990' FEL	H	7-18S-27E	1628'-1720'	1575'	2 3/8"	.75 psi/ft	1221 PSIG
West Red Lake Unit	19	1980' FNL & 660' FWL	E	8-18S-27E	1615'-1746'	1564'	2 3/8"	.65 psi/ft	1050 PSIG
West Red Lake Unit	44	840' FSL & 1750' FWL	K	5-18S-27E	1599'-2025'	1550'	2 3/8"	.60 psi/ft	959 PSIG
West Red Lake Unit	57	280' FSL & 850' FEL	P	6-18S-27E	1529'-1962'	1475'	2 3/8"	.85 psi/ft	1300 PSIG
West Red Lake Unit	60	50' FSL & 1980' FWL	N	5-18S-27E	1247'-1991'	1175'	2 3/8"	.90 psi/ft	1122 PSIG

All wells in Eddy County, New Mexico



ADMINISTRATIVE ORDER NO. WFX-727

**APPLICATION OF PENNZOIL EXPLORATION AND PRODUCTION COMPANY TO
EXPAND ITS WATERFLOOD PROJECT IN THE ATOKA-SAN ANDRES POOL IN EDDY
COUNTY, NEW MEXICO**

**ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Division Order No. R-3476, Pennzoil Exploration and Production Company has made application to the Division on September 26, 1997 for permission to expand its Atoka San Andres Waterflood Project in the Atoka-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, Pennzoil Exploration and Production Company, be and the same is hereby authorized to inject water into the San Andres formation at approximately 1430 feet to approximately 1833 feet through 2 3/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the following described wells, for purposes of secondary recovery to wit:

Atoka San Andres Unit Well No.120
330' FSL & 990' FWL
UL 'M', Section 11, Township 18 South, Range 26 East,
Injection Interval Approximately: 1636 feet to 1692 feet
Maximum Injection Pressure: 327 psig

Atoka San Andres Unit Well No.132
990' FNL & 2310' FWL
UL 'C', Section 14, Township 18 South, Range 26 East,
Injection Interval Approximately: 1512 feet to 1687 feet
Maximum Injection Pressure: 302 psig

Atoka San Andres Unit Well No.136
2310' FNL & 1650' FEL
UL 'G', Section 14, Township 18 South, Range 26 East,
Injection Interval Approximately: 1621 feet to 1805 feet
Maximum Injection Pressure: 324 psig

All wells NMPM, Eddy County, New Mexico.

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 well, 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.

As there was insufficient data supplied with the application to allow for higher injection pressures, the injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection wells to no greater than .2 psi per foot of depth to the uppermost injection perforations.

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 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.

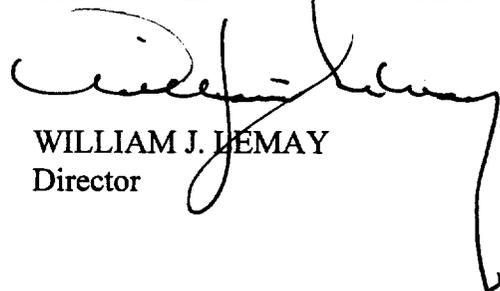
The subject wells shall be governed by all provisions of Division Order No. R-3476 as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

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 18th day of November, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

WJL/BES

cc: Oil Conservation Division - Artesia
Case File No.3831