

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

N.M. Oil Cons. Division  
1625 N. French Dr.  
Hobbs, NM 88240

FORM APPROVED  
OMB No. 1004-0135  
Expires July 31, 1996

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other	2. Name of Operator Echo Production, Inc.	3a. Address PO Box 1210, Graham, TX 76450	3b. Phone No. (include area code) (940) 549-3292	6. Serial No. NM 063228	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 330' FSL & 1980' FEL Sec 27 T23S R32E				8. Well Name and No. Corsair 27 Federal #1	9. API Well No. 30-025-34901
				10. Field and Pool, or Exploratory Area Triste Draw Delaware	11. County or Parish, State Lea County, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input checked="" type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

- Formation producing water on lease: Delaware
- Amount of water produced: +200 BPD
- Current water analysis: Attached
- How water is stored on lease: 300 BBL fiberglass tank.
- How water is moved to disposal facility: 3" polyethelene line
- Disposal Facility
  - Operators Name: EOG Resources, Inc.
  - Well Name: East Corbin Delaware Unit #11 (formerly Federal "MA" #11)
  - Well type and well number: WIW, #11
  - Location: 1340' FNL & 990' FEL Sec 21 T18S R33E Lea County, NM
- Injection Permit: Attached

14. I hereby certify that the foregoing is true and correct  
Name (Printed/Typed) Tom Golden

Title Operations Manager

Signature

*Tom Golden*

Date 6/27/00

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

(ORIG. SGD.) GARY GOURLEY

PETROLEUM ENGINEER

Date

JUL 07 2000

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

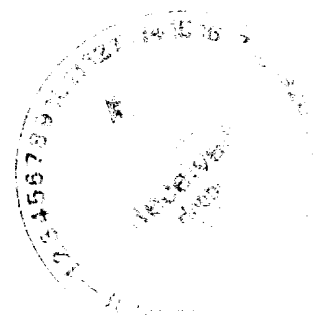


ATTACHMENT to Incident of Noncompliance number \_\_\_\_\_

The following information is needed before your disposal of produced water can be approved, Onshore Oil & Gas Order # 7.

- 1.- Name(s) of all formation(s) producing water on the lease.
- 2.- Amount of water produced from all formations in barrels per day.
- 3.- A CURRENT water analysis of produced water from all zones showing at least the total dissolved solids, ph, and the concentrations of chlorides and sulfates.
- 4.- How water is stored on the lease.
- 5.- How water is moved to the disposal facility.
- 6.- Identify the Disposal Facility by :
  - A.- Operators name.
  - B.- Well name.
  - C.- Well type and well number. (SWDW) (WIW)
  - D.- Location by 1/4 1/4, section, township, & range.
- 7.- A copy of the Underground Injection Control Permit - issued for the injection well by the Environmental Protection Agency or New Mexico Oil Conservation Division where the State has achieved primacy.

Submit all the above required information, to this office, on a Sundry Notice form 3160-5 in triplicate within the required time frame.



**Saturation Index Calculations**  
*Champion Technologies, Inc.*  
 (Based on the Tomson-Oddo Model)

**Site Information**

Company	EOG (ECHO)
Field	Corsair Fed.
Point	1
Date	5/10/2000

**Water Analysis (mg/L)**

Calcium	22,055
Magnesium	875
Barium	89
Strontium	2,032
Sodium*	67624
Bicarbonate Alkalinity	390
Sulfate	413
Chloride	147,000

**Appended Data**

CO2	910 mg/L
Iron	106 mg/L

\* - Calculated Value

**Physical Properties**

Ionic Strength*	4.78
pH†	5.88
Temperature	88°F
Pressure	50 psia

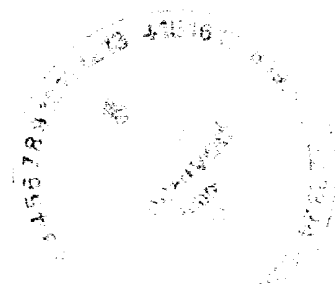
\* - Calculated Value † - Known/Specified Value

**Calcite Calculation Information**

<i>Calculation Method</i>	<i>Value</i>
pH	5.88
<i>Bicarbonate Alkalinity Correction(s)</i>	<i>Value</i>
None Used	—

**SI & PTB Results**

<i>Scale Type</i>	<i>SI</i>	<i>PTB</i>
Calcite (Calcium Carbonate)	0.09	21.0
Gypsum (Calcium Sulfate)	-0.16	N/A
Hemihydrate (Calcium Sulfate)	-0.17	N/A
Anhydrite (Calcium Sulfate)	0.05	18.3
Barite (Barium Sulfate)	2.19	52.5
Celestite (Strontium Sulfate)	0.95	196.5





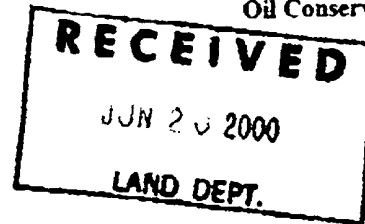
Burlington Well/Wt-

# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON  
Governor  
Jennifer A. Salisbury  
Cabinet Secretary

Lori Wrotenbery  
Director  
Oil Conservation Division

June 15, 2000



EOG Resources, Inc.  
P.O. Box 2267  
Midland, Texas 79702

Attn: Mr. M. Lee Roark

**Re: Request to Reinstate Authorization to Inject into the ECDU Well No. 1 (API No. 30-025-30622) (previously known as the State "16" Well No. 4) located 548 feet from the South line and 760 feet from the West line of Section 16, Township 18 South, Range 35 East, NMPM, Lea County, New Mexico. East Corbin Delaware Unit Waterflood Project. Division Order No. R-10390.**

Dear Mr. Roark:

My staff has reviewed your request to reinstate the authorization to inject in the above referenced well. Providing that all conditions contained in the order remain the same and there have been no additional wells drilled or plugged in the area of review, authorization to inject in the above referenced well is hereby approved.

All other provisions and conditions of Division Order No. R-10390 and Division Rules 706 and 1120 shall remain in full force and effect.

Sincerely,

Lori Wrotenbery  
Director

LW/MWA/kv

cc: Oil Conservation Division - Hobbs  
Case No. 11208

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. 11208  
ORDER NO. R-10390

APPLICATION OF MERIDIAN OIL, INC. FOR A WATERFLOOD PROJECT  
AND QUALIFICATION FOR THE RECOVERED OIL TAX CREDIT PURSUANT  
TO THE "NEW MEXICO 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 February 16, 1995 at Santa Fe,  
New Mexico, before Examiner Michael E. Stogner.

NOW, on this 19th day of June, 1995 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) At the time of the hearing this case was consolidated with Division Case  
No. 10207 for the purpose of testimony.

(3) By Order No. R-10317, issued in Case 11207 on February 27, 1995, the  
Division, upon application by Meridian Oil, Inc., approved the East Corbin Delaware  
Unit which comprises the following described 760 acres, more or less, of Federal and  
State lands in Lea County, New Mexico:





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TOWNSHIP 18 SOUTH, RANGE 33 EAST, NMPM

Section 15: S/2 SW/4  
Section 16: SW/4, NE/4 SE/4, and S/2 SE/4  
Section 21: NE/4, N/2 NW/4, and SE/4 NW/4  
Section 22: N/2 NW/4 and SW/4 NW/4.

(4) The applicant in this matter, Meridian Oil, Inc. ("Meridian"), seeks authority to institute a waterflood project in said East Corbin Delaware Unit by the injection of water into the West Corbin-Delaware Pool through the following three existing wells located in Township 18 South, Range 33 East, NMPM, Lea County, New Mexico:

- a) the Meridian Oil, Inc. State "16" Well No. 4 (API No. 30-025-30622), located 548 feet from the South line and 760 feet from the West line (Unit M) of said Section 16 is currently a producing oil well in the subject pool (perforations from 5192 feet to 6248 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval;
- b) the Meridian Oil, Inc. State "16" Well No. 8 (API No. 30-025-31168), located 660 feet from the South line and 460 feet from the East line (Unit P) of said Section 16 is currently a producing oil well in the subject pool (perforations from 5200 feet to 5260 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval; and,
- c) the Southland Royalty Company Federal "21" Well No. 4 (API No. 30-025-30736), located 779 feet from the North line and 1943 feet from the West line (Unit C) of said Section 21 is currently a producing oil well in the subject pool (perforations from 5156 feet to 5260 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval.

(5) Meridian further requests to drill its Federal "MA" No. 11 well 1340 feet from the North line and 990 feet from the East line (Unit H) of said Section 21 to be utilized as an injection well in said project through perforations from approximately 5200 feet to 5270 feet.

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Order No. R-10390  
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(6) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(7) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil thereby preventing waste, exhibits sound engineering practices, is in the best interest of conservation, and will not impair correlative rights.

(8) The applicant submitted data on the proposed injection wells, water wells in the area, and all other wells (including plugged wells) which penetrate the zone of interest within the 1/2-mile "area-of-review" of the four subject injection wells. This data shows that wells in the area are cased and plugged so as to protect fresh water and prevent fluid migration from the injection zone, and includes testimony indicating no evidence of open faults or any other hydrologic connection between the injection zone and the fresh water resources in the area.

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

(10) Injection into each well should be accomplished through either 2 3/8-inch internally plastic-lined tubing installed in a packer set no higher than 100 feet above the top of the upper most perforation; the casing-tubing annulus in each well 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 leaks in the casing, tubing or packer.

(11) 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 1040 psi.

(12) 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.

(13) 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.

(14) The subject application should be approved and the project should be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

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Order No. R-10390  
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(15) The applicant further requests that the subject waterflood project be approved 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).

(16) The evidence presented indicates that the subject waterflood project meets all the criteria for approval.

(17) The approved "project area" should initially comprise that area described in Finding Paragraph No. (3) above.

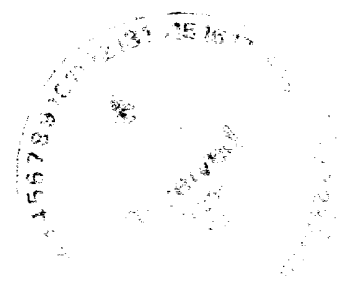
(18) To be eligible for the EOR credit, prior to commencing injection operations, the operator must request from the Division a Certificate of Qualification, which certificate will specify the proposed project area as described above.

(19) 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.

(20) The injection authority granted herein for the proposed injection wells should 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.

**IT IS THEREFORE ORDERED THAT:**

(1) The applicant, Meridian Oil, Inc. ("Meridian"), is hereby authorized to institute a waterflood project in its East Corbin Delaware Unit Area (approved by Division Order No. R-10317, issued in Case 11207 on February 27, 1995), by the injection of water into the West Corbin-Delaware Pool through the following three existing wells to be converted from producing oil wells to injectors and one new well to be drilled, all located in Township 18 South, Range 33 East, NMPM, Lea County, New Mexico:



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Well Name and Number (API Number)	Forage Location (Unit Letter)	Section	Perforated Injection Interval (feet)
Meridian Oil, Inc. State "16" Well No. 4 (30-025-30622)	548' FSL & 760' FWL (M)	16	5192 - 6248
Meridian Oil, Inc. State "16" Well No. 8 (30-025-31168)	660' FSL & 460' FEL (P)	16	5200 - 5260
Southland Royalty Company Federal "21" Well No. 4 (30-025-30736)	779' FNL & 1943' FWL (C)	21	5156 - 5246
Federal "MA" Well No. 11 (new drill)	1340' FNL & 990' FEL (H)	21	5200 - 5270

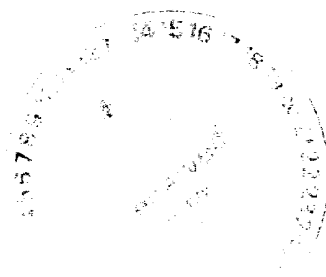
(2) The waterflood project, hereby designated the "*East Corbin Delaware Unit Waterflood Project*", shall coincide with the boundary of the East Corbin Delaware Unit Area, as further described below, and was the subject of said Division Order No. R-10317:

**TOWNSHIP 18 SOUTH, RANGE 33 EAST, NMPM**  
**LEA COUNTY, NEW MEXICO**

Section 15: S/2 SW/4  
 Section 16: SW/4, NE/4 SE/4, and S/2 SE/4  
 Section 21: NE/4, N/2 NW/4, and SE/4 NW/4  
 Section 22: N/2 NW/4 and SW/4 NW/4.

(3) The applicant must take all steps necessary to ensure that the injected water only enters and remains confined to 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.

(4) Injection shall be accomplished through 2-3/8 inch internally plastic-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation; the casing-tubing annulus in each well shall be filled with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.



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(5) The injection wells or pressurization system for each injection well shall be so equipped as to limit injection pressure at the wellhead to no more than 1040 psi.

(6) The Division Director shall have the authority to administratively authorize an increase in the injection pressure limitation placed upon any well upon a proper showing by the operator that such higher pressure will not result in the migration of the injected water from its respective interval or fracture the confining strata.

(7) Prior to commencing injection operations, the casing in each injection 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.

(8) 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.

(9) Should it become necessary, the supervisor of the Hobbs District Office of the Division or the Director may at any time order a decrease of the injection pressure on any of the subject injection wells.

(10) The operator of the East Corbin Delaware Unit Waterflood Project shall conduct injection operations in accordance with all applicable Division rules, regulations, and policies, including Division General Rules 701 through 708 and shall submit monthly progress reports in accordance with Division General Rules 706 and 1115.

**IT IS FURTHER ORDERED THAT:**

(11) The subject waterflood project is hereby approved as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(12) The approved "project area" shall initially comprise that area described in Decretory Paragraph No. (2) above.

(13) To be eligible for the EOR credit, prior to commencing injection operations, the operator must request from the Division a Certificate of Qualification, which certificate will specify the proposed project area as described above.



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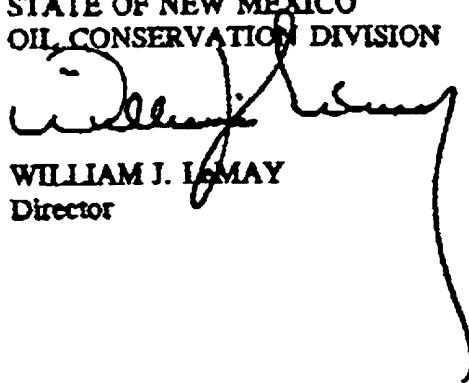
(14) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefiting from enhanced recovery 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.

(15) The injection authority granted herein for the proposed injection wells 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.

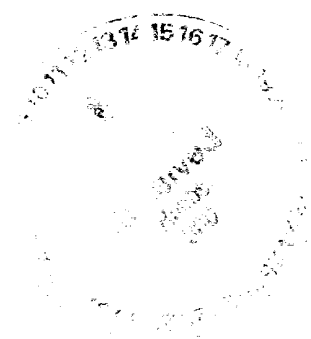
(16) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LEMAY  
Director

SEAL





NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

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

East Corbin Delaware  
well #11

ADMINISTRATIVE ORDER NO. WFX-701

**APPLICATION OF BURLINGTON RESOURCES OIL & GAS COMPANY TO EXPAND ITS  
WATERFLOOD PROJECT IN THE WEST CORBIN DELAWARE POOL IN LEA COUNTY,  
NEW MEXICO**

**ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION**

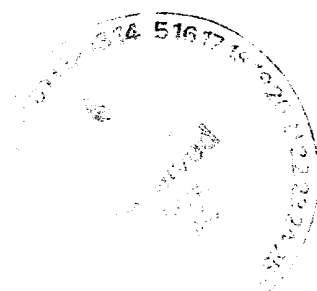
Under the provisions of Division Order No. R-10390, Burlington Resources Oil & Gas Company has made application to the Division on November 18, 1996 for permission to expand its East Corbin Delaware Unit Waterflood Project in the West Corbin Delaware Pool in Lea County, New Mexico.

**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 expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.
- (5) The subject well is located within an approved Enhanced Oil Recovery Project area and shall qualify for applicable tax credits under such project.
- (6) The application should be approved.

**IT IS THEREFORE ORDERED THAT:**

The applicant, Burlington Resources Oil & Gas Company, be and the same is hereby authorized to inject water into the Delaware formation at approximately 5218 feet to approximately 5246 feet through 2 3/8-inch-plastic lined tubing set in a packer located at approximately 5100 feet in the following described well for purposes of secondary recovery to wit:



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 well, 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 10th day of December, 1996.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

*WJL*  
WILLIAM J. LEMAY  
Director

S E A L

WJL/BES

cc: Oil Conservation Division - Hobbs  
File: Case No.11208; EOR-24

