STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

RECEIVED
NOV 16 1984
OIL CONSERVATION DIVISION

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: El Paso Exploration Company
Address: 1800 Wilco Bldg. Midland, Texas 79701
Contact party: William J. Cates Phone: 915-684-7575

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project R-3919.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: C. J. Cilfone Title Production Engineer

Signature: Charles J. Cilfone Date: October 31, 1984

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. February 4, 1970 - Examiner Hearing Case No. 4303 -

Application of El Paso Natural Gas Co. for a Waterflood Project, Lea County, New Mexico

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

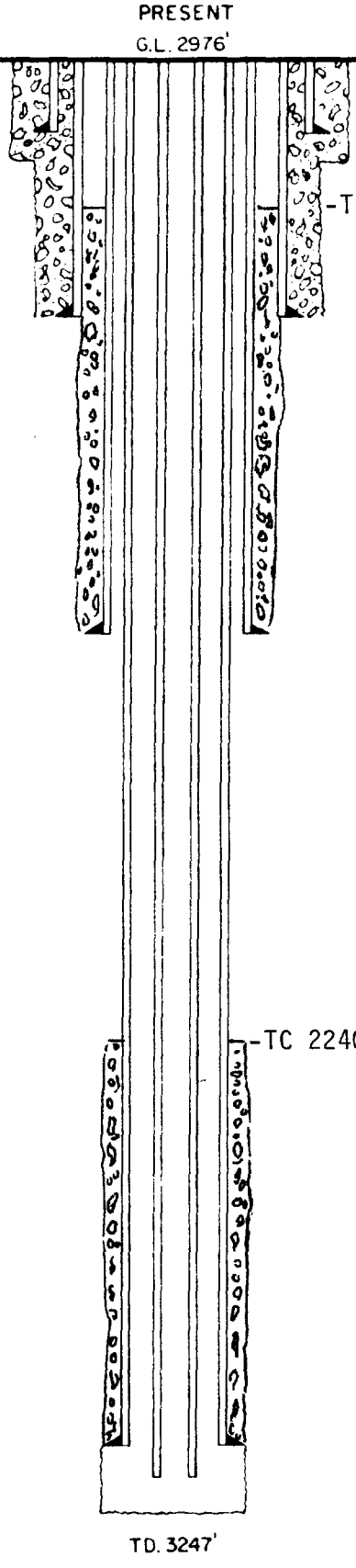
Section III. Well Data

# Moberly "C"-3

## Sec. 21, T-26-S, R-37-E

1980' FNL, 660' FWL

## Lea County, New Mexico




1" = 400'

# Moberly "C"-3

Section III. Well Data

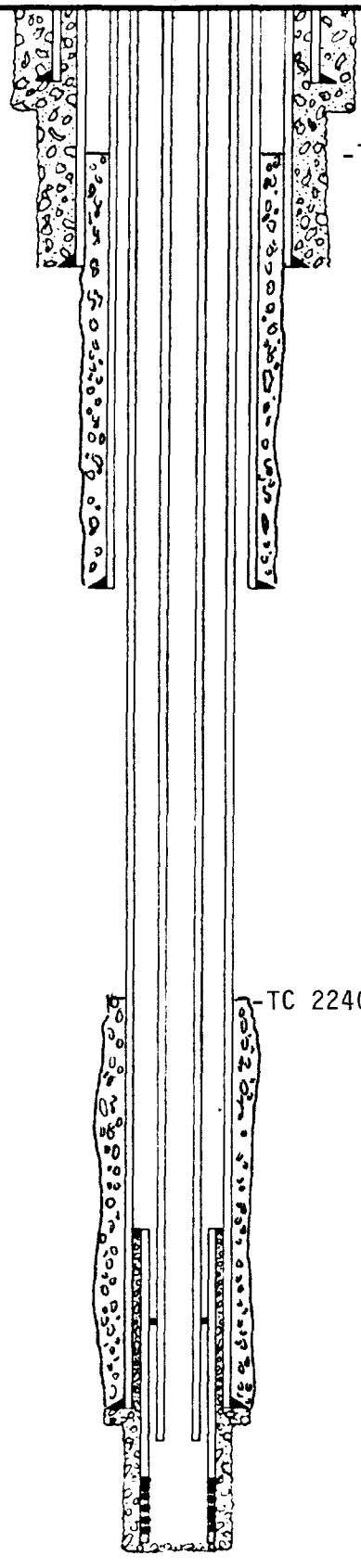
## Sec. 21, T-26-S, R-37-E

1980' FNL 660' FWL

## Lea County, New Mexico

PROPOSED

G.L. 2976'



12½" 50# 162' 15 1/2" hole circ.

-TC 330' Volumetric

10.0" 45# 570' 12 1/2" hole circ.

8¼" 32# 1280' (200 Sx) 10" hole

2⅜" Plastic Lined Tubing

-TC 2240' Volumetric

Cemented To Liner Top at 2700'

Packer Set at 2900'

Because of liner packer must be placed here! JSG

5½" 17# 3097' (200 Sx) 8 1/4" hole

4" 9.5# FJP Liner

Perforated 3250'-3386' Into Seven Rivers

TD. 3400'

1" = 400'

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
III. WELL DATA A.

| LEASE | WELL NO. | LOCATION | CASING SIZE | SETTING DEPTH | SACKS CEMENT | HOLE SIZE | TOP CEMENT |
|---|---|---|---|---|---|---|---|
| Moberly | "C" -3 | 1980' FNL, 660' FWL | 12 1/2" | 162' | - | 15 1/2" | Circulated |
| | | Sec. 21, T26S, R37E | 10" | 570' | - | 12 1/2" | Circulated |
| | | Lea County | 8 1/4" | 1280' | 200 Sx | 10" | 330' volumetric |
| | | | 5 1/2" | 3097" | 200 Sx | 8 1/4" | 2240' volumetric |
| | | (Proposed)---------- | 4" | 2700'-3400' | 100 Sx | 4 3/4" | Circulated to liner to |

Tubing will be 2 3/8" 4.7# EUE with plastic liner inserts set at 3200'.

Packer will be a Baker Model "AD-1" set at 2900'.

C-108
APPLICATION FOR AUTHORIZATION TC INJECT
III. WELL DATA B.

1. The formation where injection will occur is the Seven Rivers at approximately 3250'-3386'

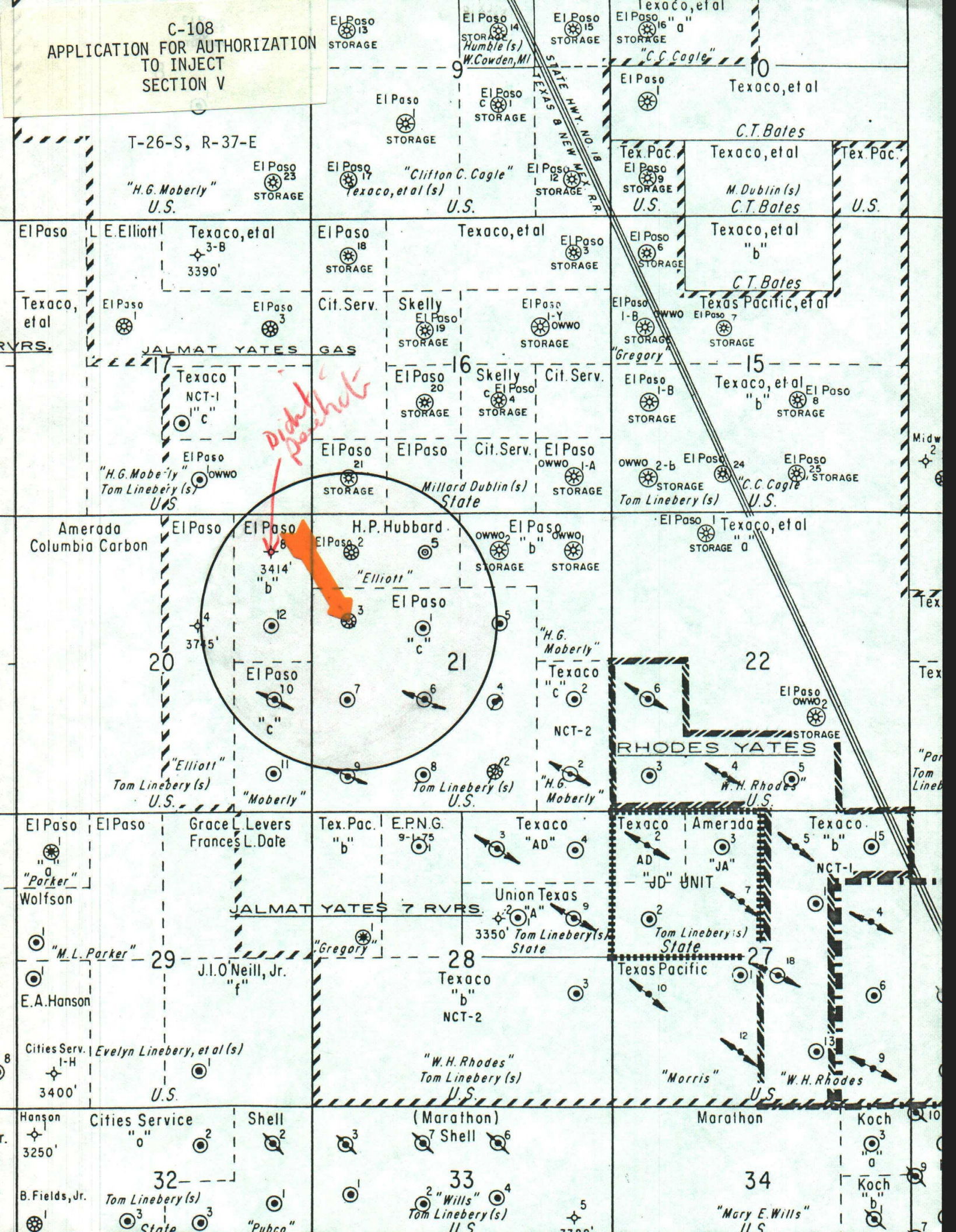
2. The injection interval will be perforated.

3. The original purpose of the well was to produce gas out of the Yates Formation.

4. Well was completed open hole into the Yates Formation. There are no bridges plugs or no other open formation.

5. The next higher hydrocarbon formation after recompletion would be the Yates at approximately 3200'. The next lower hydrocarbon formation is the Queens at approximately 3700'.

C-108
APPLICATION FOR AUTHORIZATION
TO INJECT
SECTION V



C-108
APPLICATION FOR AUTHORIZATION TO INJECT
SECTION VII

1. The proposed average maximum daily rate is 400 barrels of water per day. The proposed maximum daily rate is 500 barrels of water per day.

2. The system will be closed.

3. The proposed average injection pressure is 1450 psi. The proposed maximum injection pressure is 1600 psi.

4. Source of water will be El Paso Natural Gas's Water Supply Well #6. Analysis showing compatibility are included.

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

# Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

## RESULT OF WATER ANALYSES

LABORATORY NO. 118412

TO: Mr. Charlie Cilfone
1800 Wilco Building, Midland, Texas

SAMPLE RECEIVED 11-1-84

RESULTS REPORTED 11-7-84

COMPANY El Paso Exploration Company LEASE Moberly Waterflood Unit

FIELD OR POOL

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from El Paso Natural Gas' Jal Plant #1 water well #6.

NO. 2 Produced (Yates/Seven Rivers) water-taken from Moberly Waterflood.

NO. 3

NO. 4

REMARKS:

| CHEMICAL AND PHYSICAL PROPERTIES | NO. 1 | NO. 2 | NO. 3 | NO. 4 |
|---|---|---|---|---|
| Specific Gravity at 60° F. | 1.0063 | 1.1036 | | |
| pH When Sampled | | | | |
| pH When Received | 7.40 | 7.70 | | |
| Bicarbonate as $HCO_3$ | 444 | 988 | | |
| Supersaturation as $CaCO_3$ | 20 | 65 | | |
| Undersaturation as $CaCO_3$ | — | — | | |
| Total Hardness as $CaCO_3$ | 1,385 | 41,500 | | |
| Calcium as Ca | 304 | 3,120 | | |
| Magnesium as Mg | 152 | 8,189 | | |
| Sodium and/or Potassium | 623 | 45,740 | | |
| Sulfate as $SO_4$ | 906 | 3,786 | | |
| Chloride as Cl | 1,016 | 96,586 | | |
| Iron as Fe | 4.0 | 4.6 | | |
| Barium as Ba | | | | |
| Turbidity, Electric | | | | |
| Color as Pt | | | | |
| Total Solids, Calculated | 3,444 | 158,409 | | |
| Temperature °F. | | | | |
| Carbon Dioxide, Calculated | | | | |
| Dissolved Oxygen, Winkler | | | | |
| Hydrogen Sulfide | 0.0 | 45.0 | | |
| Resistivity, ohms/m at 77° F. | 1.90 | 0.066 | | |
| Suspended Oil | | | | |
| Filtrable Solids as mg/l | | | | |
| Volume Filtered, ml | | | | |

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The above results do not reveal any evidence of incompatibility between these two waters. However, the key to compatibility would be whether or not there is oxygen in the supply water (could not be determined on this sample). If there is oxygen present, then it would cause an incompatibility with the produced water. However, it is possible that oxygen could be avoided by enclosing the water well; or if this is not possible, then oxygen should be removed from the supply water.

Form No. 3

By

Waylan C. Martin, M. A.

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
SECTION IX

No stimulation program for proposed well.

**AFFIDAVIT OF PUBLICATION**

State of New Mexico,

County of Lea.

I, Robert L. Summers

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not in a supplement thereof for a period

of One weeks.

Beginning with the issue dated November 5, 19 84

and ending with the issue dated November 5, 19 84

Robert L. Summers
Publisher.

Sworn and subscribed to before me this 6 day of November, 19 84

Jane Paulowsky
Notary Public.

My Commission expires 3-24, 19 87
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

OFFICIAL SEAL
Signature Jane Paulowsky
JANE PAULOWSKY
NOTARY PUBLIC - NEW MEXICO
NOTARY BOND FILED WITH SECRETARY OF STATE
My Commission Expires 3-24-87

35 **LEGAL NOTICE**
November 5, 1984

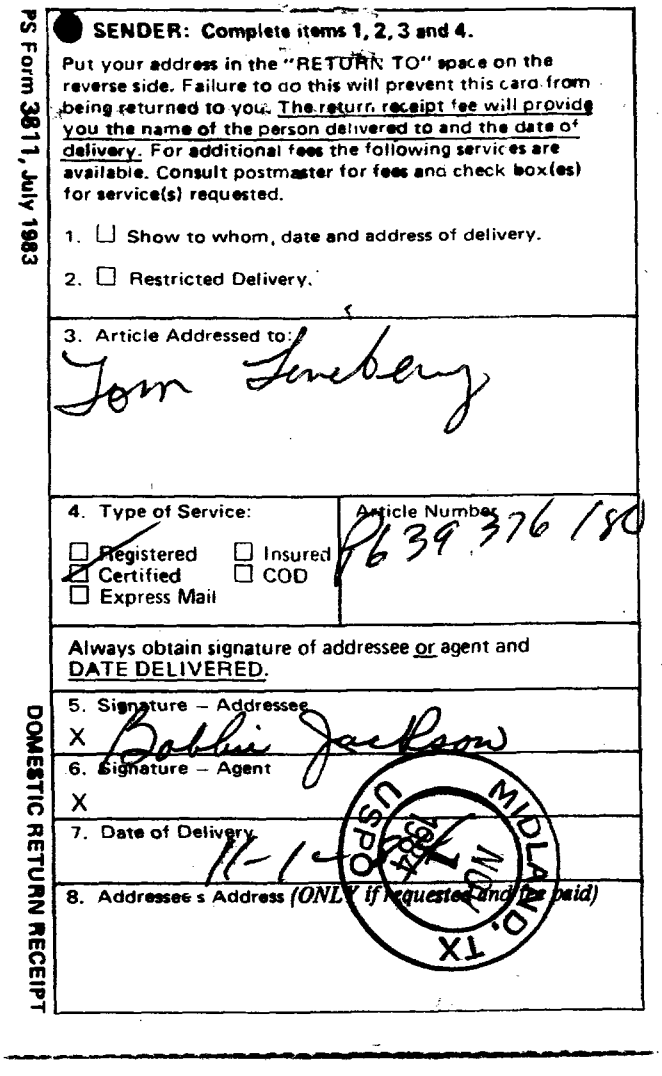
Notice is hereby given that El Paso Exploration Company, 1800 Wilco Building, Midland, Texas, 79701, Contact Party-William J. Cates, Phone No. 915-684-7575, has filed for administrative approval to convert the Moberly "C" No. 3 well from a gas well to a water injection well for El Paso Exploration Moberly Waterflood Unit in the Rhodes Yates — Seven River Field. The well is located 660' from the West line and 1980' from the North line of Section 21, T26S, R37E, NMPM, Lea County, New Mexico.

The well is to be completed through the Seven Rivers formation to a total depth of 3400 feet. Water injection is to be in the Lower Yates and Seven Rivers formation at a maximum rate of 500 bbls. per day and maximum surface pressure of 1450 psi.

Interested parties who oppose the granting of this application must file their objection or request for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501 within 15 days.

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
SECTION XIV. PROOF OF NOTICE

Please note certified mail delivery to the Surface Land Owner, Tom Linebery. A copy of the application was received by him on November 1, 1984.



PS Form 3811, July 1983

**SENDER: Complete items 1, 2, 3 and 4.**

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to: Tom Linebery

4. Type of Service:
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail

Article Number P 639 376 180

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X Bobbie Jackson

6. Signature – Agent
X

7. Date of Delivery 11-1-84

8. Addressee's Address *(ONLY if requested and fee paid)*

USPO MIDLAND TX

DOMESTIC RETURN RECEIPT