

**EXXON** COMPANY, U.S.A.

POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702

August 15, 1985

*Case 8705*

PRODUCTION DEPARTMENT  
MIDCONTINENT DIVISION

THOMAS J. TIBBITTS  
REGULATORY AFFAIRS MANAGER

Application for SWD Well  
Yates Federal "C" Well No. 22  
Eddy County, New Mexico

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87501

Gentlemen:

Exxon Corporation respectfully requests administrative approval of the enclosed application to convert the subject well to salt water disposal. In support of this request, Form C-108 and all of its attachments are enclosed. Also included is a proof of publication of a legal notice in the Carlsbad Current-Argus newspaper. Copies of this application are being sent by certified mail to leasehold operators within one-half mile, and the Bureau of Land Management in Roswell is being notified as surface owner.

If you have any questions or require further information regarding this submittal, please contact Mr. J. K. Lytle or Ms. J. B. Edgar at the letter-head address or at (915) 686-4104.



JBE:bsc

Attachments

xc: New Mexico Oil Conservation Division  
District 2 Office  
Drawer DD  
Artesia, New Mexico

Offset Operators  
BLM-Roswell, NM

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Exxon Corporation

Address: P. O. Box 1600, Midland, TX 79702

Contact party: J. K. Lytle Phone: (915) 686-4104

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?  yes  no  
If yes, give the Division order number authorizing the project R-7408

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: J. K. Lytle Title Sr. Technical Advisor

Signature: J. K. Lytle Date: 8-13-85

\* 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. Well log submitted with completion report which was filed

on 12-1-83.

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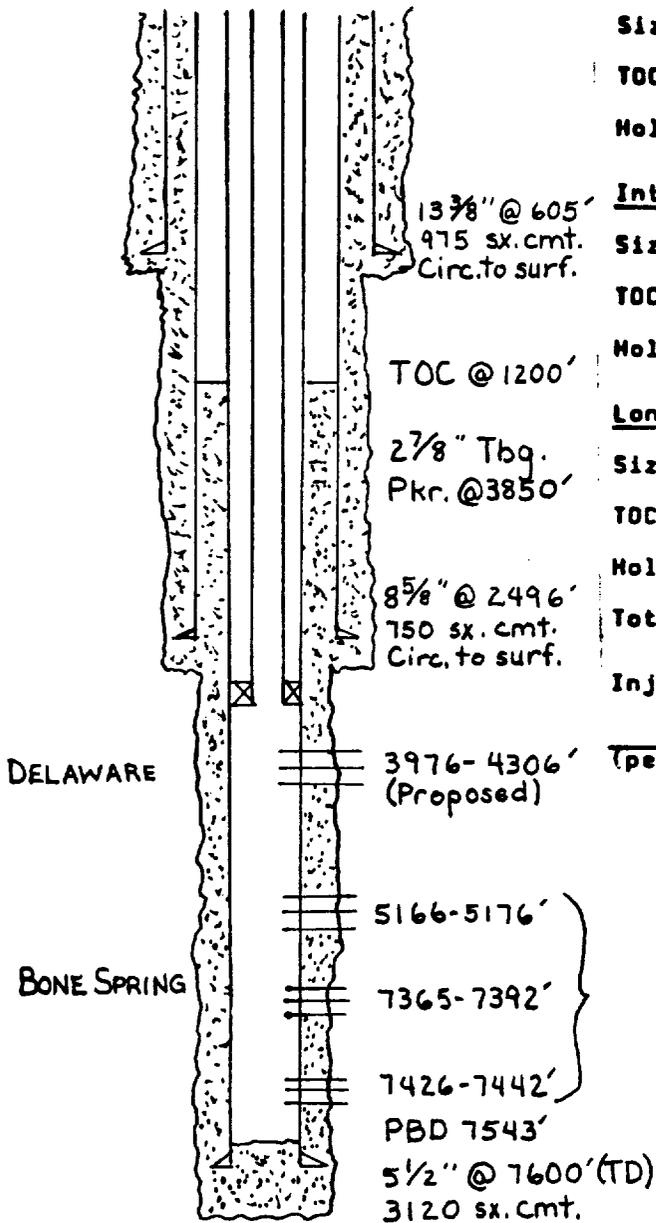
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

# INJECTION WELL DATA SHEET

Exxon Corporation	Yates Federal "C"		
<b>OPERATOR</b>	<b>LEASE</b>		
22	5940' FSL & 660' FWL	4	21 S
<b>WELL NO.</b>	<b>FOOTAGE LOCATION</b>	<b>SECTION</b>	<b>TOWNSHIP</b>
			27 E
			<b>RANGE</b>

Schematic

Tubular Data



Surface Casing

Size 13-3/8 " Cemented with 975 sk.  
 TOC Surface feet determined by Circ.  
 Hole size 17-1/2"

Intermediate Casing

Size 8-5/8 " Cemented with 750 sk.  
 TOC Surface feet determined by Circ.  
 Hole size 11"

Long string

Size 5-1/2 " Cemented with 3120 sk.  
 TOC 1200 feet determined by Temp. Survey  
 Hole size 7-7/8"

Total depth 7600

Injection interval (Perforated)  
3976 feet to 4306 feet  
 (perforated or open-hole, indicate which)

Tubing size 2-7/8" lined with cement set in a  
 (material)  
Baker lokset packer at ± 3850' feet.  
 (brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Delaware
2. Name of Field or Pool (if applicable) Avalon Delaware
3. Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled? The well was originally drilled to produce oil from the Bone Spring formation.
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) 5166-5176, 7365-7392, 7426-7442. (Will plug back if application is approved. - Set CIBP @ 5096' w/35' cmt. cap.)
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Overlying - Ceder Hills Yates (±525')  
Underlying - Avalon Bone Springs (±5000')

SUPPLEMENT TO APPLICATION FOR AUTHORIZATION TO INJECT

V. Map is attached.

VI. Offset well data is supplied on attached schematics.

VII. Proposed Operation:

1. Average daily rate - 630 BPD  
Maximum daily rate - 1600 BPD  
Volume of fluids to be injected - 3,000,000 Bbls
2. System is closed.
3. Average injection pressure - 790 psig  
Maximum injection pressure - 790 psig
4. The source of water that will be disposed of is from the Delaware Mountain Group. The water is being produced from the following wells: Exxon Yates Federal "C" numbers 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, and 18 in Section 31, T-20-S, R-28-E, Eddy County, New Mexico. Attached are chemical analyses of the produced water from the Yates Federal "C" #6 (3550' - 3624') and Yates Federal "C" #8 (2570' - 2694').
5. A chemical analysis of the disposal zone formation water is not available. However, we do not anticipate that it is significantly different from that of the Yates Federal "C" #6 or #8.

VIII. The proposed injection zone in the Yates Federal "C" #22 is at a depth of 3938' to 4322' (-728' to -1112' subsea). It is in the Brushy Canyon Member of the Delaware Mountain Group. The 384' thick interval consists of fine to very fine grained sand, composed primarily of quartz, with lesser amounts of feldspar, clay, dolomite, and calcite. Regional dip is to the SE at 3-4°. All our data indicates that there are no hydrocarbons within this zone.

Fresh water in this area has been encountered in the Rustler Formation and in the Capitan Reef. The deepest fresh water was found at approximately 1725' in the Capitan Reef. The nearest fresh water well - the Raines well - is about 3/4 mile to the NE.

The cross section shows that the proposed disposal interval is bounded both above and below by several impermeable layers. Therefore, no contact with nearby commercial oil production is expected.

There are no indications of open faults or other hydrological connections between the proposed disposal interval and fresh water zones.

**IX. Proposed stimulation program on Exxon Yates Federal "C" #22 SWD; perforations 3976 - 4306.**

1. Frac 4218 - 4306 and 3976 - 4136 with 75,000 gals. gelled KCL water and 78,000# 20-40 sand in 2 stages using diverter.
2. Run temperature survey
3. Swab/flow back load
4. Clean wellbore and prepare to inject

**X. Test data on the Exxon Yates Federal "C" #22**

1. Well logs have been filed with the Division.
2. Results of completion attempts:

8-30-83 to 11-14-83:

Perf 7426 - 7442 (4 spf), acidize with 2000 gals 7-1/2% HCl, frac with 20,000 gals UF frac fluid, CO<sub>2</sub> and 33,000# 20-40 sand.

Perf 7365 - 7392 (4 spf), frac with 40,000 gals YFCO<sub>2</sub> frac fluid and 58,000# 20-40 sand. Potential test (24 hours) 12 bbl oil, 2 bbl water and 56 MCF gas.

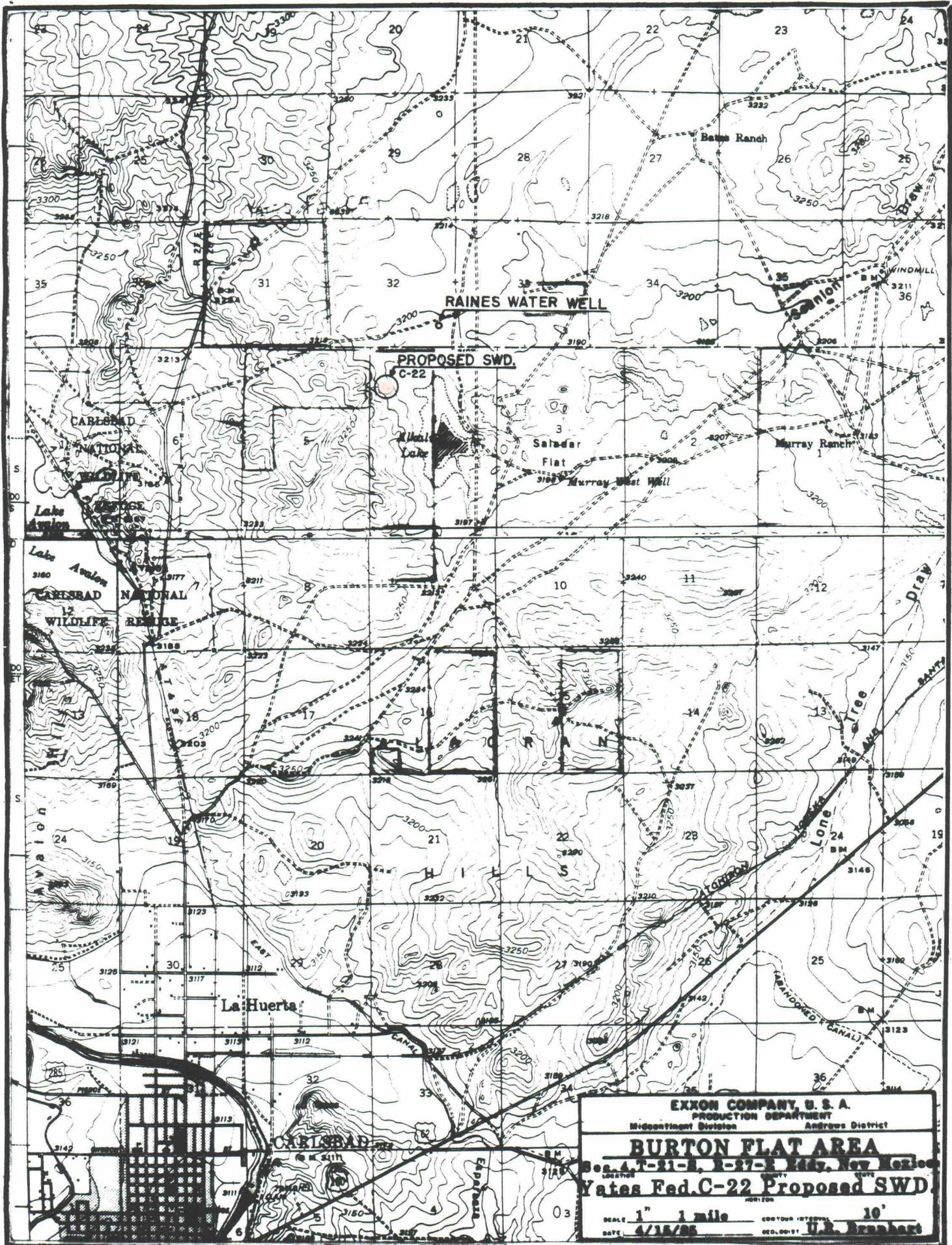
2-12-85 to 2-28-85:

Perf 5166 - 5176 (4 spf), acidize with 1000 gals 15% HCl, frac with 8500 gals XL4, 21,000# 20-40 sand, 40 tons CO<sub>2</sub>. 24 hour potential test - 10 bbls oil, 25 bbls water and 44 MCF gas.

**XI. Attached is a fresh water analysis on the Raines water well located in Sec. 32, T-20-S, R-20-E. A map is also included showing approximate well locations.**

**XII. See top of this page for statement.**

**XIII. A signed statement of mailing of notice is attached, along with proof of publication.**



**EXXON COMPANY, U. S. A.**  
 PRODUCTION DEPARTMENT  
 Midcontinent Division      Andrews District

**BURTON FLAT AREA**  
 Sec. 4, T-21-N, R-17-E 146, New Mexico  
**Yates Fed. C-22 Proposed SWD**

SCALE **1" = 1 mile**      CONTOUR INTERVAL **10'**  
 DATE **4/15/56**      GEOLOGIST **U. B. Drumbert**

Copies of NMCOD Form C-108 were sent to the following by certified mail on August 15, 1985:

Offset Operators

Flag-Redfern Oil Co.  
P. O. Box 11050  
Midland, TX 79702

Hamon Oil Co.  
Box 663  
3900 Republic Bank Tower  
Dallas, TX 75221-0663

Mesa Petroleum Co.  
Vaughn Bldg., Ste. 1000  
400 W. Texas Ave.  
Midland, TX 79701

Mobil Producing Texas & N.M. Inc.  
Nine Greenway Plaza, Ste. 2700  
Houston, TX 77046

Napeco, Inc.  
Box 283  
Houston, TX 77001

James M. Welch Oil Prod.  
707 Bullock Avenue  
Artesia, NM 88210

Surface Owner

Bureau of Land Management  
Roswell Area Resource Office  
P. O. Box 1397  
Roswell, NM 88201

*J. B. Edgar*  
J. B. Edgar  
Oil & Gas Conservation

# Affidavit of Publication

State of New Mexico,  
County of Eddy, ss.

E. C. Cantwell, being first duly sworn,  
on oath says:

That he is publisher of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the state wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

July 30, , 19 85  
\_\_\_\_\_, 19 \_\_\_\_  
\_\_\_\_\_, 19 \_\_\_\_  
\_\_\_\_\_, 19 \_\_\_\_

that the cost of publication is \$ 5.94 ,  
and that payment thereof has been made  
and will be assessed as court costs.

E C Cantwell

Subscribed and sworn to before me this  
30 day of July , 19 85

Douglas J. Jaffer

My commission expires 6/01/88  
Notary Public

July 30, 1985  
Applicant — Exxon Corporation, P.O. Box 1600, Midland, TX 79702, Contact Party — J.K. Lytle, Phone — (915) 686-4104.  
Item — Application to the New Mexico Oil Conservation Division for approval of the conversion of a well to salt water disposal. The well is located 5940' FSL and 600' FWL of Section 4, Township 21S, Range 27E, Eddy County, New Mexico. The disposal zone will be the Delaware formation from 3976' to 4306'. The maximum injection rate will be 1600 barrels per day; the maximum pressure will be 790 psig. 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.