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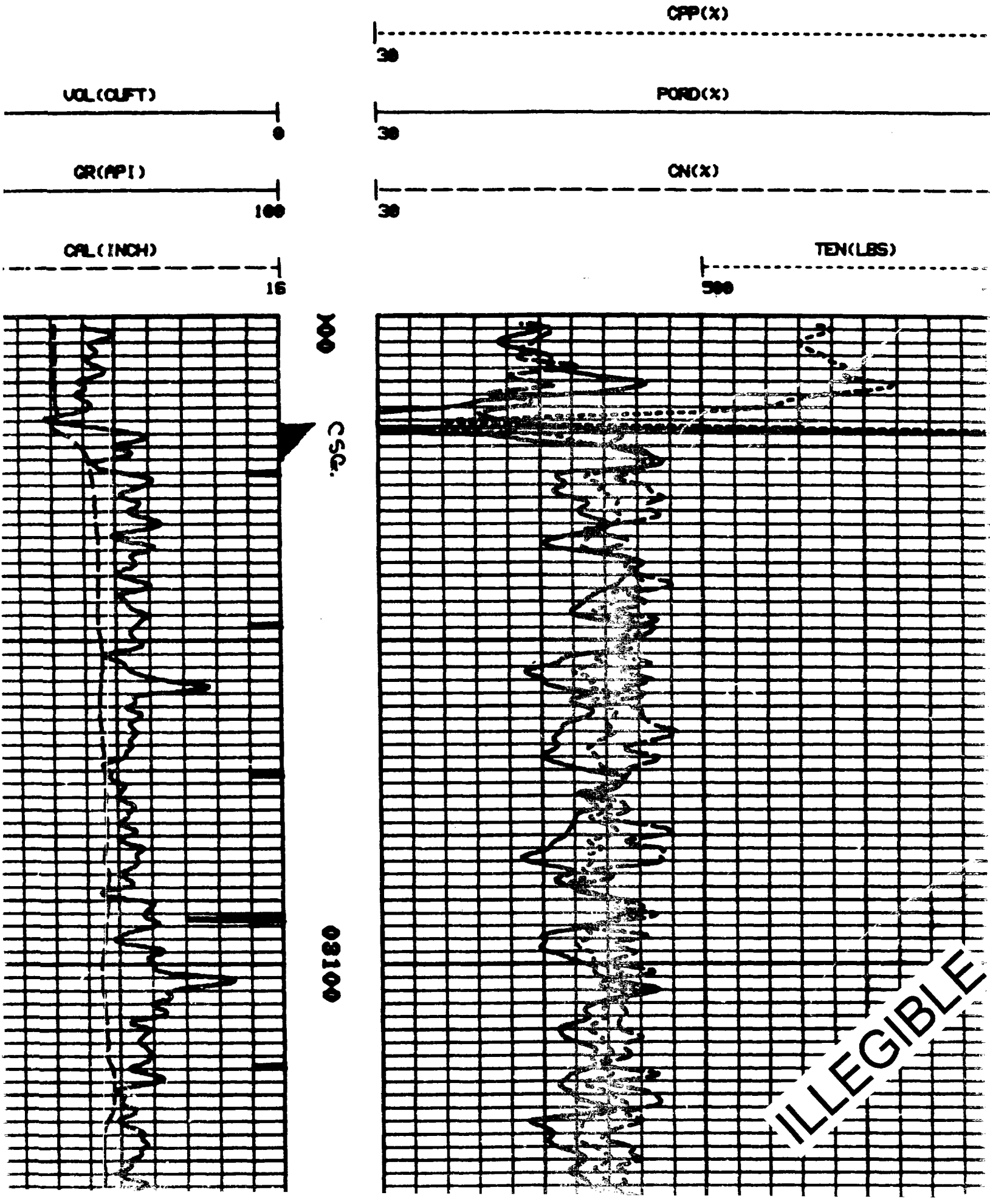
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EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702-1600

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

December 17, 1990

Amendment to SWD permit
Yates Federal "C" #11 and #22
Eddy County, New Mexico

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

Attention Mike Catanach

Attached are the newspaper clippings and affidavits of publication for the Yates Federal "C" #11 and #22 amended injection applications.

If there are any questions, please call (915) 688-7552.

Sincerely,

Marsha Wilson

Marsha Wilson
Regulatory Affairs

\mw
Attachments

№ 12809

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:

December 6, , 19 90

, 19

, 19

, 19

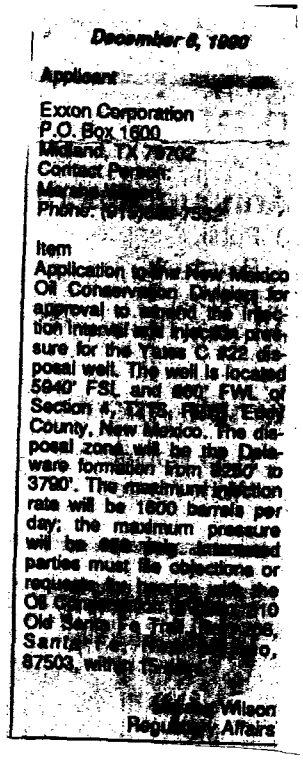
that the cost of publication is $ 9.98, and that payment thereof has been made and will be assessed as court costs.

E C Cantwell

Subscribed and sworn to before me this 6 day of December 19 90

Donella Taylor

My commission expires 6/01/92
Notary Public



December 6, 1990

Applicant

Exxon Corporation
P.O. Box 1600
Midland, TX 79702
Contact Person:
Phone:

Item
Application to the New Mexico Oil Conservation Division for approval to expand the injection interval and injection pressure for the Yates C #22 disposal well. The well is located 5940' FSL and 660' FWL of Section 4, T21S, R36E, Lea County, New Mexico. The disposal zone will be the Delaware formation from 3660' to 3790'. The maximum injection rate will be 1600 barrels per day; the maximum pressure will be [illegible] determined parties must file objections or requests for hearing with the Oil Conservation Division at 310 Old Santa Fe Trail, Santa Fe, New Mexico, 87503, within fifteen days.

[illegible] Wilson
Regulatory Affairs

DEC 13 90

EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702-1600

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

November 28, 1990

Amendment to SWD permit
Yated Federal "C" #22
Eddy County, New Mexico

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

Exxon Corporation respectfully requests administrative approval of the enclosed application to amend the injection interval and pressure of the Yates Federal "C" #22. In support of this request, Form C-108 and its attachments are enclosed. 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. A proof of publication of a legal notice will be forwarded to you as soon as received. This publication is sent to the Carlsbad Current-Argus newspaper by certified mail.

If you have any questions or require further information regarding this submittal, please call (915) 688-7552.

Sincerely,

Marsha Wilson

Marsha Wilson
Regulatory Affairs

\mw
Attachments

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

Offset Operators
BLM-Roswell, NM

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

RECEIVED
NOV 30 '90
O. C. D.
ARTESIA, OFFICE

FORM C-108
Revised 7-1-81

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, Texas 79702

Contact party: Kevin P. Jensen Phone: (915) 688-6220

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-8050.

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: Kevin P. Jensen Title Senior Engineer

Signature: Kevin P. Jensen Date: 10/30/90

* 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. Information submitted with initial application for conversion of well to saltwater disposal dated August 15, 1985.

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

II. WELL DATA

. 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.

. 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.

IV. 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.

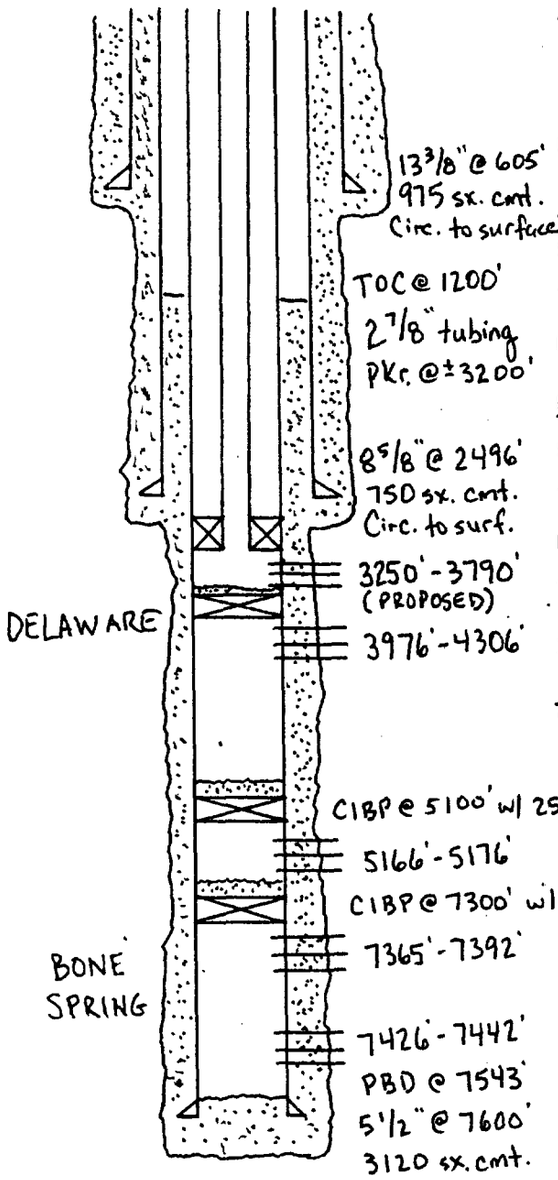
NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

OTICE: 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 "C" Federal			
OPERATOR	LEASE			
22	5940' FSL & 660' FWL	4	21S	27E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tubular Data

Surface Casing

Size 13 3/8 " Cemented with 975 sx.

TOC Surface feet determined by Circ.

Hole size 17 1/2"

Intermediate Casing

Size 8 5/8 " Cemented with 750 sx.

TOC Surface feet determined by Circ.

Hole size 11"

Long string

Size 5 1/2 " Cemented with 3120 sx.

TOC 1200 feet determined by Temp. Survey

Hole size 7 7/8"

Total depth 7600'

Injection interval

3250 feet to 3790' feet

(perforated or open-hole, indicate which)

Tubing size 2 7/8 lined with cement (material) set in a

Baker lokset (brand and model) packer at ± 3200 feet

(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? 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'. Set CIBP at 7300' and spotted 50 sx cement on top. Set second CIBP at 5100' and spotted 25 sx cement on top. Sundry Notice date 9-2-87.

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.

SUPPLEMENT TO APPLICATION FOR AUTHORIZATION TO INJECT

V. Map is attached.

VI. Information submitted with initial application for conversion of well to saltwater disposal dated August 15, 1985.

VII. Proposed Operations

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 - 650 psig
   Maximum injection pressure - 650 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; Exxon Hondo "A" State numbers 1, 2, 3, and 4 in Section 32, T-20-S, R-28-E, Eddy County, New Mexico; and Hondo Fee #2 in Section 32, 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. Information submitted with initial application for conversion of well to saltwater disposal dated August 15, 1985.

IX. Proposed stimulation program on Exxon Yates "C" Federal #22 SWD; new perforations 3250' - 3790'.

1. Set CIBP at ± 3900' and spot 25 sx. cement on top of CIBP.

2. Perf from 3250' - 3350', 3410' - 3520', and 3610' - 3790' at 1 SP4F.

3. Frac 3610' - 3790' with approximately 30,000 gals. gelled water and 65,000# 20-40 sand.

4. Frac 3410' - 3520' with approximately 30,000 gals. gelled water and 65,000# 20- 40 sand.

5. Frac 3250' - 3350' with approximately 30,000 gals. gelled water and 65,000# 20- 40 sand.

6. Run temperature survey.

7. Swab/flow back load.

8. Clean wellbore and prepare to inject.

X. Information submitted with initial application for conversion of well to saltwater disposal dated August 15, 1985.

XI. Information submitted with initial application for conversion of well to saltwater disposal dated August 15, 1985.

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

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

Copies of NMOCD Form C-108 were sent to the following by certified mail on November 28,1990:

Offset Operators

Petrus Oil Co., L.P.
12377 Merit Dr., Ste. 1600
Dallas, TX 75251

Kerr-McGee Corp.
3 Northpoint Dr., Ste. 100
Houston, TX 77060

J. M. Welch
P.O. Box 4596
Artesia, NM 88210

G. D. Riggs
P.O. Box 116
Carlsbad, NM 88220

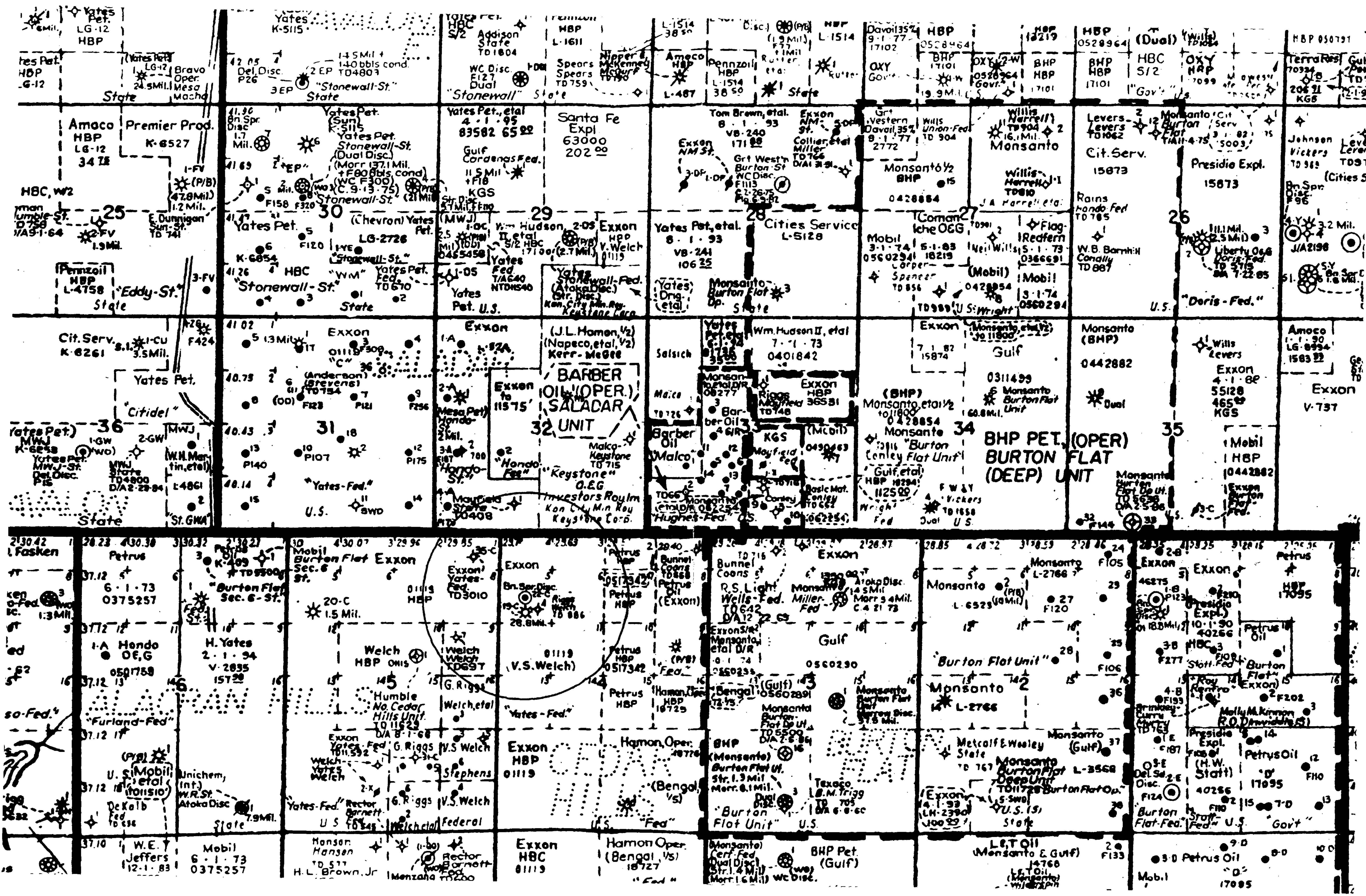
Exxon Corporation
Houston, TX

Surface Owner

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

Marsha M. Wilson

Marsha M. Wilson
Regulatory Affairs



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Amoco HBP LG-12
Premier Prod. K-6527
HBC, W/2
Pennzoil HBP L-4758
"Eddy-St."
State
Cit. Serv. K-6261
Yates Pet.
"Citidel"
"Stonewall-St."
Yates Pet.
HBC
Exxon
"Yates-Fed."
U.S.
Santa Fe Expl 63000
Yates Pet., etal
Gulf Cordenas Fed.
KGS
Exxon HBP V. Welch
(J.L. Hamon, 1/2) (Napeco, etal, 1/2) Kerr-McGee
BARBER OIL (OPER.) SALADAR 32 UNIT
"Keystone" O.&G.
Investors Royltm
Yates Pet., etal.
Cities Service L-5128
Tom Brown, etal.
Monsanto
Wm. Hudson II, etal
Exxon HBP
Barber Oil
Malco
KGS
Mobil
Monsanto 1/2 BHP
Gulf
(BHP) Monsanto, etal 1/2
"Burton Flat Unit"
BHP PET. (OPER) BURTON FLAT (DEEP) UNIT
Cit. Serv.
Presidio Expl.
Levers
Willis
"Doris-Fed."
Monsanto (BHP)
Exxon
Amoco
Petrus
H. Yates
Hondo O&G
"Furland-Fed"
Mobil
Unichem, (Int.) W.R. St.
W.E. Jeffers
Mobil Burton Flat Sec. 6 St.
Exxon
Welch HBP
Humble No. Cedar Hills Unit
"Yates-Fed."
V.S. Welch
Federal
Hanson
H.L. Brown, Jr
Rector Barnett
Exxon HBP
(V.S. Welch)
Hamon Oper.
(Bengal, 1/s)
"Fed."
Petrus HBP
R.S. Light Wells-Fed.
Gulf
BHP (Monsanto) Burton Flat Ut.
Texaco
"Burton Flat Unit"
BHP Pet. (Gulf)
Monsanto
"Burton Flat Unit"
Metcalf & Wesley State
Monsanto Burton Flat Deep Unit
L.&T. Oil (Monsanto & Gulf)
Exxon
Presidio Expl.
Petrus Oil
"Burton Flat-Fed."
Mobil

Re: Injection into the Exxon Corp., Yates Fed C #2, E-4-21-27

Exxon Corp has submitted a proposal to increase its injection interval in its Yates Fed C #22 located in Unit E of Section 4, Township 21 South, Range 27 East, NMPM. Currently, produced salt water is being injected into the interval from approxiamately 3976 ft. to 4306 ft. Exxon proposes to open the interval from approxiamately 3250 ft to 3790 ft. This injection interval would be entirely in the Delaware formation.

There is a potential problem in the Yates Fed C #19 well which is 392 ft due south. This well, also operated by Exxon, has cement outside of 5½" casing up to 3185 ft. In correlating logs from the two wells, I found them to be relatively flat to each other. At a shaley marker just above the injection interval the Yates Fed C #22 is 9 ft. lower structurally than the Yates Fed C #19. The top of the injection interval correlates to the offset well at 3248 ft with the top of cement at 3185 ft, this leaves 63 ft. of cement above the top of the injection interval in the Yates Fed C #19. However, within this 63 ft, there are several shale stringers which show little or no permeability on the resistivity logs. These stringers should effectively isolate the injection interval from any zones above. My reservations lie in the quality of cement outside the 5½" casing from 3248 ft. up to 3185 ft. This would seem to me to be the most likely avenue for the injected water to get out of zone.

DIVISION

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

91 JAN 17 AM 9 NS

OIL CONSERVATION DIVISION
ARTESIA DISTRICT OFFICE

Bruce King
GOVERNOR

P.O. DRAWER DD
ARTESIA, NEW MEXICO 88211-0719
(505) 748-1283

January 11, 1991

M E M O R A N D U M

TO: David Catanach

FROM: Darrell Moore dbm

SUBJECT: Injection into the Exxon Corp., Yates Fed. C #22, E-4-21-27

Exxon Corp. has submitted a proposal to increase its injection interval in its Yates Fed. C #22 located in Unit F of Section 4, Township 21 South, Range 27 East, N.M.P.M. Currently, produced salt water is being injected into the interval from approximately 3976 ft. to 4356 ft.. Exxon proposes to open the interval from approximately 3250 ft. to 3790 ft. This injection interval would be entirely within the Delaware formation.

There is a potential problem in the Yates Fed C #19 well which is 792 ft. due south. This well, also operated by Exxon, has cement outside of 5 1/2" pipe up to 3185 ft. In correlating logs from the two wells, I found them to be relatively flat to each other. At a shaley marker just above the injection interval, the Yates Fed. C #22 is 9 ft. lower structurally than the Yates Fed. C #19. The top of the injection interval correlates to the offset well at 3248 ft. With the top of cement at 3185 ft., this leaves 63 ft. of cement above the top of the injection interval in the Yates Fed. C #19. However, within this 63 ft. there are several shale stringers which show little or no permiability on the resistivity logs. These stringers should effectively isolate the injection interval from any zones above. My reservations lie in the quality of the cement job outside the 5 1/2" casing from 3248 ft. up to 3185 ft. this would seem to be the most likely avenue for the injected water to get out of zone. If I can be of further assistance, please feel free to call.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

25 September 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Exxon Corporation for salt water disposal, Eddy County, New Mexico. CASE 8705

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: James G. Bruce
Attorney at Law
HINKLE LAW FIRM
P. O. Box 2068
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

MR. STOGNER: Call next Case Number 8705.

MR. TAYLOR: Application of Exxon Corporation for salt water disposal, Eddy County, New Mexico.

MR. STOGNER: We will now call for appearances.

MR. BRUCE: Mr. Examiner, my name is Jim Bruce from the Hinkle Law Firm in Santa Fe, and I have two witnesses to be sworn.

MR. STOGNER: Are there any other appearances in this matter?

Will the witnesses please stand and raise your right hand and be sworn?

(Witnesses sworn.)

JACK K. LOWRY,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. BRUCE:

Q Would you please state your name, city of

residence, occupation, and employer?

A My name is Jack Lowry. I live in Andrews, Texas, and I'm employed by Exxon Corporation as a petroleum geologist.

Q And have you previously testified before the New Mexico OCD?

A No.

Q Would you briefly state your educational and work background?

A I've got a Bachelor of Science degree from Oklahoma State University in 1981.

I have worked four years in West Texas and southeast New Mexico as a petroleum geologist.

Q And for all that time have you worked for Exxon?

A Yes.

Q Are you familiar with Case 8705 and the geological matters involved therein?

A Yes, I am.

MR. BRUCE: Mr. Examiner, is the witness considered qualified?

MR. STOGNER: He is.

Q Mr. Lowry, would you state briefly what Exxon seeks by its application?

A Exxon seeks the authority to dispose of

produced salt water into the Undesignated Avalon Delaware Pool in its Yates Federal "C" 22 Well, located at 1557 feet from the north line, 660 feet from the west line in Unit E, Section 4, Township 21 South, Range 27 East, Eddy County, New Mexico.

The proposed perforated interval is 3976-4306 feet.

Q Would you please briefly describe Exhibit Number One for the examiner?

A Exhibit One is a plat of the injection well and the surrounding area. Exxon's lease holdings are colored yellow. There are two circles on the map. One represents a half mile radius of the injection well. The other one is a two mile radius of the proposed injection well.

The wells in the area have been color coded. The wells within the two mile circle that penetrated the proposed injection zone are colored red.

The wells in the half mile circle that have penetrated the proposed injection zone are colored green, and within the half mile circle the wells that have penetrated -- have not penetrated the proposed injection zone are colored blue.

In addition the green arrow indicates the Yates Federal "C" No. 11. It's located in the southwest of the southeast corner of Section 31. It was -- received ap-

proval as a salt water disposal well in December, 1983, December 14th, 1983. It was OCD Order No. R-7408.

Also the blue dot in the southeast quarter of Section 32 is the only fresh water producing well in the area.

Q Will you now refer to Exhibit Number Two and comment on it?

A Exhibit Number Two is a 3-well cross section through the proposed -- through the area. It is a cross section through the proposed injection well, the Yates Federal "C" 22, and through the Yates Federal "C" 11, the already approved injection well, and the Mobil Fed 4 Com No. 1, which is located in the east half of the east half of Section number 4.

In addition, the point I'd like to point out on the cross section is that this cross section is completely in the Delaware Mountain Group. It indicates and shows the stratified nature of the Delaware, which is basically alternating sandstones, siltstones, and shales. These shales have been colored red and they act as effective permeability barriers to prevent any communication either up or down the wellbore.

It also, in addition we see that the proposed injection zone correlates to the injection zone that we're presently using in the Yates Federal "C" No. 11.

Q Mr. Lowry, to the best of your knowledge are there any faults connecting the injection zone to any fresh water zone?

A There are none.

Q And the fresh water well that you previously mentioned in Section 32, what formation does it produce from?

A It produces from the Rustler formation at about 350 feet in depth.

Q Who are the offset operators and the surface owner in this well?

A They are Flag-Redfern Oil Company, Hamon Oil Company, Mesa Petroleum Company, Mobil Producing Texas and New Mexico, Napeco, Incorporated, James -- and James M. Welch Oil Producers.

The surface owner is the Bureau of Land Management and we have a certified return receipt indicating that Form C-108 was mailed to them and it's submitted as Exhibit Number Three.

Q In your opinion will the granting of this application be in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A Yes, it will.

Q Were Exhibits One and Three compiled by you from records maintained by Exxon and have you reviewed

Exhibit Two and the data pertinent to it, and do you agree with its interpretations?

A Yes, I do.

MR. BRUCE: Mr. Examiner, at this time I would submit Exhibits One through Three.

MR. STOGNER: Exhibits One through Three will be admitted into evidence.

Mr. Bruce, your next witness, what's his qualifications? Will he be an engineer or --

MR. BRUCE: Yes, he's an engineer.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Lowry, can you elaborate a little bit more on the well just south of the proposed injection well or does your next witness plan to proceed with that information?

MR. BRUCE: Mr. Jordan will testify further on that.

MR. STOGNER: Okay. Never mind, Mr. Lowry.

Q Mr. Lowry, your injection well in Section 31, the one that was approved, that's the Yates Federal "C" No. 11, approved by R-7408, when did injection commence on

that well?

A I'm not familiar with that. I think Mr. Jordan can probably answer that question.

Q Okay.

MR. JORDAN: I'm not sure of the exact date.

MR. STOGNER: Well, thank you, Mr. Jordan.

MR. JORDAN: But it's within a --

MR. STOGNER: Thank you, Mr. Jordan.

MR. STOGNER: I have no questions of this witness at this time. I may have some later on.

You may step down.

Mr. Bruce.

JOHNNY W. JORDAN,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. BRUCE:

Q Would you please state your name, city of residence, occupation, and employer?

A My name is Johnny Jordan. I reside in Andrews, Texas. I'm employed with Exxon Company, U.S.A.

Q And what is your profession?

A I'm a reservoir engineer.

Q Have you previously testified before the New Mexico OCD?

A No, I have not.

Q Would you please briefly state your educational and work background?

A I have a BS degree in chemical engineering from the University of Oklahoma.

I graduated in 5 May 83.

I've worked with Exxon as a reservoir engineer since that time in Andrews, Texas.

Q And the area of the state you work in is West Texas and southeast New Mexico?

A That's correct.

Q And are you familiar with case -- this case and the engineering matters involved?

A Yes, sir, I am.

MR. BRUCE: Mr. Examiner, is the witness considered qualified?

MR. STOGNER: Mr. Jordan is so qualified.

Q Mr. Jordan, will you please refer to Exhibit Numbers Four-A and Four-B and describe them for the examiner?

A Exhibit Number Four is the wellbore schematic of the proposed saltwater disposal well as it appears now.

Also on this schematic is the proposed perforations and they're marked as proposed.

The well was spudded on July 27th, 1983, and drilled to a depth of 7600 feet.

A 13-3/8ths casing string, surface casing string was set at 605 feet; cemented with 975 sacks of cement and cement was circulated to surface.

An intermediate casing string, 8-5/8ths inches, was set at 2496 and cemented with 750 sacks of cement and circulated to surface.

An intermediate string, 5-1/2 inch casing was set at 7600 feet with 3120 sacks of cement.

Top of the cement is 1200 feet, located by a temperatur survey.

The proposed salt water disposal well was

originally drilled to produce oil from the Bone Spring formation. Intervals from 5166 to 5176 and 7365 to 7442 were perforated, stimulated, and tested for oil production.

Exhibit Four-C gives the details of these completion attempts.

Exhibit Four-B is a more detailed explanation of the information contained on the schematic, which is Exhibit Four-A.

The well produced 10 barrels of oil, 25 barrels of water, and 44 MCF of gas before being shut in.

We didn't receive approval to flair the gas any longer so it was shut in and being uneconomical to lay a gas line to the well. If approval is not received on this proposed injection well, the plans are to plug and abandon this completion.

Q Thank you. Would you please now refer to Exhibit Number Five and detail that for the Examiner?

A This, Exhibit Number Five is a description of the proposed salt water disposal operation. Our anticipated average daily rate is expected to be 630 barrels per day of water.

The maximum injection pressure is 790 psig.

The source of water that will be disposed of in this well is from the Delaware Mountain Grou. The

water is being produced from the following wells: The Exxon Yates Federal "C" No. 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, and 18 in Section 31, Township 20 South, Range 28 East, Eddy County, New Mexico.

Q Would you please now refer to Exhibit Number Six and detail that for the examiner?

A Exhibit Number Six-A, B, and C, are chemical analyses from the Yates Federal "C" No. 6 and 8. These are both Exxon wells, and the Raines fresh water well.

It also contains an independetn laboratory's opinion regarding the compatibility of the commingled two waters.

Also, we have not seen any compatibility problems in the Yates Federal "C" No. 11.

Q And is a fresh water analysis also included on Exhibit Number Six?

A Yes, it is.

Q Would you please now refer to Exhibit Number Seven-A and Seven-B and describe the wells within the half mile radius which penetrate the injection zone?

A Exhibit Number Seven-A and Seven-B are wellbore diagrams of the two wells within a half mile of the proposed salt water disposal well that have penetrated the Delaware Pool.

The Exxon Yates Federal "C" No. 19, the

well just south of the proposed well, was the only one to actually penetrate the injection zone.

It is a Morrow completion with the top of the cement being 3185, determined by a temperature survey. The cement should be ample protection for this well.

Q And would you also briefly describe Exhibit Seven-B?

A Seven-B is a wellbore schematic of the Yates Federal "C" No. 35. Its TD was 3110. It is into the Delaware Pool but not -- it's about 800 feet shallower than our proposed injection zone.

Q Were Exhibits Four through Seven prepared or compiled by you or under your direction?

A Yes, they were.

Q And in your opinion will granting of this application be in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A Yes, it will.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits Four through Seven.

MR. STOGNER: Exhibits Four through Seven will be admitted into evidence.

MR. BRUCE: I have no further questions of this witness.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Jordan, let's refer first to Exhibit Number Four.

You'll be running 2-7/8ths inch tubing, is that correct?

A That's correct.

Q And you cement lined. Would you please elaborate a little bit more than that? Is that a plastic lined or how is it lined with cement?

A It's very similar to the plastic lined tubing except that it is a cemet composite material, so it's done in the same procedure that the plastic coated tubing is done.

Q Is it sprayed on?

A No, it's on the inside of the -- well, I'm not just exactly sure of the procedure in which it's done.

Q What service company will be doing this? Or will you all be buying the tubing as that way?

A We'll be buying the tubing that way.

Q Has Exxon used this type of pipe in other injection wells?

A Yes, it's standard practice we're using

this type of pipe.

Q Let's go to your Exhibit Number Six. This is your water analyses.

Does Exxon have available the water -- an analysis of the water that's in existence in the Avalon Delaware?

A No, the injection zone, the actual injection zone?

Q Yes.

A No, we do not.

Q Will Yates -- I mean -- I'm sorry, would Exxon be able to supply us that information?

A Yes, we could.

Q Okay. I will let you supply that.

A Yes, sir.

Q After the hearing. Mr. Jordan, where is the nearest Delaware production in this area?

A It would be on the Yates lease in Section 31. It --

Q I'm sorry, go ahead.

A It would be probably the Yates Federal "C" No. 14.

Q And that's in the southwest of the -- I mean the southeast of the southeast?

A That's correct.

Q And that is an Avalon-Delaware producer?

A That's correct.

Q Are there any other Avalon-Delaware producers in Section 31?

A Yes. I'm not sure exactly which wells but there are several. In fact, most of them are.

MR. STOGNER: I have no further questions of this witness at this time.

Are there any other questions of Mr. Jordan?

If not, he may be excused.

Is there anything further in Case Number 8705?

MR. BRUCE: Not by me.

MR. STOGNER: If not, this case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8705, heard by me on 25 September 1985.

Michael E. Stogner, Examiner
Oil Conservation Division