

CASE 3922: Application of TENNECO
OIL COMPANY FOR SALT WATER DIS-
POSAL, ROOSEVELT COUNTY, N. MEX.

Case Number

3922

Application

Transcripts

Small Exhibits

ETC.

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 7, 1968

IN THE MATTER OF:

Application of Kern County Land
Company for Salt Water Disposal,
Roosevelt County, New Mexico

Application of Kern County Land
Company for Salt Water Disposal,
Roosevelt County, New Mexico

Application of Tenneco Oil Company
for Salt Water Disposal,
Roosevelt County, New Mexico.

Consolidated:

Case No. 3920

Case No. 3921

✓ Case No. 3922

BEFORE: ELVIS A. UTZ

TRANSCRIPT OF HEARING

MR. UTZ: We will consolidate Cases 3920, 3921 and 3922 for purposes of testimony. Separate Orders will be written on the Cases.

MR. HATCH: Case 3920: Application of Kern County Land Company for salt water disposal, Roosevelt County, New Mexico.

Case 3921: Application of Kern County Land Company for salt water disposal, Roosevelt County, New Mexico.

Case 3922: Application of Tenneco Oil Company for salt water disposal, Roosevelt County, New Mexico.

MR. UTZ: Are there any appearances in these three cases?

MR. KELLY: Booker Kelly on behalf of Tenneco Oil Company and Kern County Land Company. Kern County is solidly owned by Tenneco, but for their own internal purposes the lands are still in the name of Kern County Land Company. The witness will testify on behalf of both organizations.

(Witness sworn.)

(Applicants' Exhibits 1 through 8 marked for identification.)

* * * * *

L O U I S W I L L I A M S, called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position and employer, please?

A I am Louis Williams, a Petroleum Engineer employed by Tenneco Oil Company in Midland.

Q And have you previously qualified as a Petroleum Engineer before this Commission?

A No.

Q Would you give the Examiner a brief resume of your professional and educational experiences?

A I have a Bachelor of Science Degree in Petroleum Engineering from Texas Tech, and have been employed since that time by Union Oil Company of California and Tenneco as a Petroleum Engineer, working in the West Texas-New Mexico and South Los Angeles Areas.

Q Are you familiar with the field involved in these three hearings?

A Yes.

MR. KELLY: Are the witness's qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q (By Mr. Kelly) Now, referring to what has been

marked Exhibit No. 1 which is a plat of the area on which the three subject wells are located, would you, for the Examiner, locate the three wells and give their present status?

A The first well, Kern County Land Company's Federal 23 No. 11, located in Section 23, Township 7 South, Range 33 East, Chaveroo-San Andres Pool, Roosevelt County. The well I just mentioned is currently producing approximately 10 barrels of oil and one barrel of water per day.

The second well of interest is Kern County Land Company's Federal 21 Well No. 3, located in Section 21, Township 7 South, Range 33 East, Roosevelt County, is a producing oil well, producing about 35 barrels of oil and no water per day.

The third well of interest is Tenneco Oil Company's State "V" Well No. 3, located in Section 30, Township 7 South, Range 34 East, Roosevelt County, currently producing 17 barrels of oil and 20 barrels of water, approximately.

Q These wells, especially the last two, still have fairly substantial oil production. Did Tenneco and Kern County have any other wells that they could have used or are these about the three worst wells that you had in the area?

A These wells, there are other wells located on our

properties which make less oil than the ones chosen; however, these wells were chosen because in addition to disposing of our salt water produced in this field, we hope to gain useful data and knowledge concerning secondary recovery waterflood type operations. These wells will lend themselves to gathering of that data more readily than some others which produce less oil.

Q Is your salt water disposal plan here in conjunction with any other operator in this field?

A Yes, we're in the process now of negotiating an agreement with Pan American Petroleum Corporation to jointly dispose of water in each others' wells where it is geographically more convenient and more economical to do so.

Q As a matter of fact, what well will be first used for injection purposes?

A The well that we plan to convert and utilize first will be Kern County Land Company's Federal 23 No. 11, located in Section 23.

Q That's the one with the lowest oil production?

A Yes.

Q Is oil production from all three of these wells declining?

A Yes, it is, very rapidly.

Q Now, on Exhibit No. 2, I believe you have calculated the water analysis for this water. What is the type of water that will be injected?

A It's an extremely salty water, not fit for human or domestic uses.

Q Where is this water being produced from?

A The San Andres formation.

Q So you are just going to be putting the water back in the zone it's been produced from, is that it?

A Yes.

MR. UTZ: Mr. Kelly, let me ask a question at this point.

MR. KELLY: Yes, sir.

MR. UTZ: It is my understanding that these wells are going to be used not only for salt water disposal, but to evaluate waterflood possibilities?

THE WITNESS: Well, their primary function, of course, will be as disposal wells, but through disposal of water into these wells, we hope to gain data and information which would establish the feasibility of waterflooding.

MR. UTZ: But you are not at this time asking for a pilot waterflood?

THE WITNESS: No, we are not.

Q (By Mr. Kelly) This application is strictly for salt water disposal?

A For salt water disposal.

Q You are looking down the road as to possible secondary benefits?

A Yes, trying to make the wells serve two purposes.

Q Now, turning to what has been marked Exhibit No. 3, this is your sketch, that's Kern County Land Company Well Federal 23 No. 11?

A Yes, Federal 23, No. 11.

Q Which well is that on the plat?

A That's the well in the center of the plat with the red arrow.

Q Could you describe the installation that is proposed?

A This installation consists of 7-inch surface pipe, set at 1817 feet with cement circulated to the surface, the volume 375 sacks was used. Then the oil string is 4 and 1/2-inch casing set at 4300 feet, cemented with 350 sacks which by calculation the top of that cement should be at about 2500 feet. Then injection will be down 2 and 7/8ths-inch tubing internally plastic-coated set on a hookwall retrievable Baker Model packer at about 4300 feet. The annulus of this

well between the tubing and the casing will be filled with a treated inhibited inert type packer fluid and pressure gauge will be maintained at the surface on this annulus.

Q Now, Exhibits 4 and 5 are the sketches for the other two proposed injection wells?

A Yes.

Q The casing is the same for all three?

A Yes.

Q You will have cement circulated to the surface in all cases?

A Yes.

Q Do you feel this will protect any possible fresh water in the area?

A Yes, I do.

Q Do you feel it will protect any other possible oil producing zones?

A Yes.

Q What is the anticipated volume of water that you will be injecting into these wells?

A 200 barrels per day or less. The water production along with the oil production in this field is declining rapidly. We anticipate the water that we have to dispose of

to fall off.

Q Do you expect that you will be injecting under pressure?

A That's a distinct possibility that we'll have to inject under pressure.

Q What would that be?

A That should be a thousand pounds or less.

Q Do you anticipate that any of the wells will have any trouble taking that volume of water under pressure?

A Oh, no.

Q I believe that you have received a copy of a letter from Kermit Oil Company stating some objection to one of the proposed injection wells, is that correct?

A That's correct.

Q Which well is it?

A Kermit Oil Company has a well, their State No. 1 located in the northeast quarter of Section 25, it's a diagonal offset to Tenneco's State "V" 3, Northwest diagonal offset. We did receive a letter from those people objecting to the injection of water into the San Andres, this, of course, is the same zone that they're producing oil from.

Q Do you have any opinion as to whether the injection of water in the volumes you have testified to would have any

adverse effect on that well?

A In my opinion the small volumes of water which will be injected into this well will probably not affect them at all, and if it does, it would more than likely be a beneficial effect as I would expect an oil bank to be built as a result of this injection and that oil bank, of course, is going to be pushed at least partially toward their well.

Q In your opinion, would the granting of this application have any adverse effect on correlative rights of any operators, offset operators, in the three wells?

A No.

Q You have marked Exhibits 6, 7 and 8 which are the logs of the three wells in the order in which the cases were called, is that right?

A That is correct.

Q Were Exhibits 1 through 8 prepared by you or under your supervision?

A Yes, they were.

MR. KELLY: We move the introduction of Exhibits 1 through 8.

MR. UTZ: Without objection, Exhibits 1 through 8 will be entered into the record of this case.

(Whereupon, Applicants' Exhibits 1 through 8 offered and admitted in evidence.)

MR. KELLY: We have no further testimony on direct,
Mr. Examiner.

CROSS EXAMINATION

BY MR. UTZ:

Q What were the volumes of water, again, for each of these wells, that you anticipated to go in?

A We would anticipate a volume of 200 barrels per day or less.

Q For each well?

A Yes, the reason is we are not sure of the exact volume because we are not sure exactly what agreement we're going to come to with Pan American and how much water from what wells will ultimately wind up at any given injection well, if you follow me.

Q It says on the order that the volumes that are ordinarily injected in water injection wells for waterflood purposes, is that right, usually starts at 300 barrels a day, so that is a sizeable amount of water, it would seem to me, to be put in the San Andres. Are there any waterfloods in this area here that you know of?

A No, sir.

Q This injection zone particularly on your, is that the 30-3 well, is that your third well --

A It's 3 "V".

Q 3 "V"?

A Or "V" 3, actually.

Q Is the injection zone in that well, the "V" 3, identical to the production zone of the Kermit Well?

A Yes, we're injecting into a long interval, we are producing from a long interval in this well, 3 "V". The interval that Kermit is producing from in their well is part of that interval.

Q This plat is a little vague, is that a producing well offset to the north of your lease, or do you have a producing well offset to the north?

A Yes, sir, we have 3 wells on that tract, one, two and three, and No. 2 is the offset to the north of the No. 3 although it's hard to see on this plat.

Q Pan American has an offset from the same zone to the west?

A Yes.

Q And Skelly to the east?

A Yes, to the east.

Q Yes.

A Yes, that's true.

Q Would it be reasonable to assume that water

production would show up in any of these four wells that I have just mentioned, particularly the three offsets before it would show up in the Kermit well, that is if you were flooding out the formation?

A Normally, one would expect it to show up in either the north or the east offset before it showed up in the Kermit well. However, if directional permeability or something of that nature existed, it's possible that it would show up in the Kermit well first.

Q If the Kermit well should get some response, it could certainly be noticed by an increase in production, would that be true?

A Yes, sir.

Q And if that did happen, and they still objected to an increase in production, then something could be done about your injection at that time, could it not?

A Yes.

MR. UTZ: Are there any other questions of the witness?

MR. KELLY: Nothing further.

MR. UTZ: One thing I did want to take up. Is the cementing program on each of these three wells virtually the same as the schematic that you showed on the 23 - 11?

A Yes, sir, they are all basically the same. They differ in detail, but --

Q They're all plastic-coated tubing under a packer, annulus filled with inert fluid, gauge at the surface?

A Yes, sir.

Q And cement on the production string comes up to approximately 2500 feet?

A Yes, sir.

MR. UTZ: The witness may be excused.

(Witness excused.)

MR. UTZ: Any statements? The case will be taken under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
<u>LOUIS WILLIAMS</u>	
Direct Examination by Mr. Kelly	3
Cross Examination by Mr. Utz	11

<u>EXHIBITS</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
Applicants' 1 through 8	8	10

STATE OF NEW MEXICO)
) SS
 COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my hand this 21st day of November, 1968.

Ada Dearnley
 ADA DEARNLEY

I do hereby certify that the foregoing is a complete record of the proceedings at the aforesaid hearing of Case No. 3922, heard by me on 11-7-68. 1968
[Signature]
 _____, Reporter
 New Mexico Oil Conservation Commission

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3922
Order No. R-3577

APPLICATION OF TENNECO OIL COMPANY
FOR SALT WATER DISPOSAL, ROOSEVELT
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 7, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 19th day of November, 1968, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Tenneco Oil Company, is the owner and operator of the State "V" Well No. 3, located in Unit K of Section 30, Township 7 South, Range 34 East, NMPM, Chaveroo-San Andres Pool, Roosevelt County, New Mexico.

(3) That the applicant proposes to utilize said well to inject produced salt water into the San Andres formation, with injection into the perforated interval from approximately 4214 feet to 4344 feet.

(4) That the subject well should be classified as a pressure maintenance project injection well.

(5) That the subject pressure maintenance project is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

-2-

CASE No. 3922
Order No. R-3577

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to institute a pressure maintenance project in the Chaveroo-San Andres Pool, Roosevelt County, New Mexico, by the injection of water into the San Andres formation through its State "V" Well No. 3, located in Unit K of Section 30, Township 7 South, Range 34 East, NMPM, Roosevelt County, New Mexico.

(2) That said injection should be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 4150 feet, and into the perforated interval from approximately 4214 feet to 4344 feet;

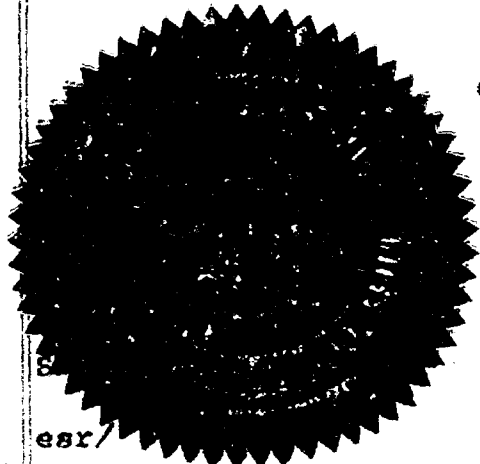
PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus in order to determine leakage in the tubing, casing, or packer.

(3) That the subject pressure maintenance project is hereby designated the Tenneco State "V" Pressure Maintenance Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(4) That monthly progress reports of the pressure maintenance project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

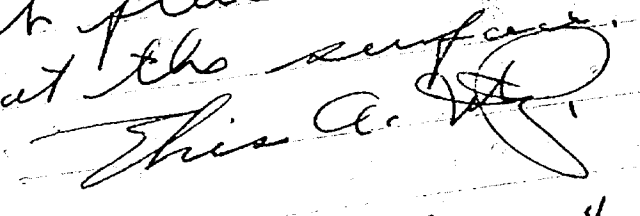
David P. Cargo
DAVID P. CARGO, Chairman

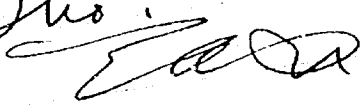
Gupton B. Hays
GULTON B. HAYS, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

esr/

Case 3922
Held 11-7-68
Rec. 11-8-68

1. Grant Tenneco's request for conversion of their ST. V¹¹ # 3. H 30-75-34E to a SWD well in the Chaveroo pool. Injection shall be thru 2 7/8 internally Plasted coated tubing under a packers set at approx. 4150 and into the S.A. thru perfor. from 4214-4344. 4 1/2 x 2 7/8 annulus shall be filled with inert fluid with a pressure gauge at the surface. This is 

There was one objection (Kermit oil Co.) to this application. He might require reports from Tenneco on offset oil production to be response from this application. I frankly don't believe it is necessary. This 

DOCKET: EXAMINER HEARING - THURSDAY - NOVEMBER 7, 1968

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 3910: (Continued from the October 23, 1968 Examiner Hearing)

Application of Atlantic Richfield Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Bough "C" zone of the Pennsylvanian formation underlying the SW/4 of Section 17, Township 10 South, Range 34 East, Vada-Pennsylvanian Pool, Lea County, New Mexico. Said acreage to be dedicated to a well located in the NE/4 SW/4 of said Section 17.

CASE 3911: (Continued from the October 23, 1968 Examiner Hearing)

Application of Atlantic Richfield Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Bough "C" zone of the Pennsylvanian formation underlying the SE/4 of Section 8, Township 10 South, Range 34 East, Vada-Pennsylvanian Pool, Lea County, New Mexico. Said acreage to be dedicated to a well located in the NW/4 SE/4 of said Section 8. In the alternative applicant seeks approval of a non-standard oil proration unit comprising the E/2 SE/4 of said Section 8 and the W/2 SW/4 of Section 9, said Township and Range, said unit to be dedicated to a well to be drilled in the NE/4 SE/4 of said Section 8.

CASE 3894: (Continued and Readvertised)

Application of Signal Oil and Gas Company for a non-standard oil proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a non-standard oil proration unit comprising the W/2 NE/4 and the N/2 SE/4 of Section 17, Township 10 South, Range 34 East, Vada-Pennsylvanian Pool, Lea County, New Mexico, said unit to be dedicated to its State AP Well No. 1 located 1980 feet from the South line and 660 feet from the East line of said Section 17.

In the alternative, applicant seeks approval of an 80-acre non-standard oil proration unit comprising the N/2 SE/4 of

(Case 3894 continued)

said Section 17 and the assignment of approximately 79% of a standard 160-acre unit allowable for said pool to said 80-acre unit.

CASE 3918: Application of R. R. Morrison for three non-standard proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of three non-standard 80-acre oil proration units in Township 10 South, Range 34 East, Vada-Pennsylvanian Pool, described as follows:

Unit No. 1 comprising the E/2 SW/4 of Section 17, dedicated to applicant's State "17" Well No. 1 located in Unit K of said Section 17;

Unit No. 2 comprising the E/2 NE/4 of Section 17, dedicated to applicant's Atlantic "A" State Well No. 1 located in Unit A of said Section 17;

Unit No. 3 comprising the W/2 SE/4 of Section 8, dedicated to applicant's State "B" Well No. 1 located in Unit J of said Section 8.

Applicant further seeks the assignment of approximately 79% of a standard 160-acre unit allowable for said pool to each of the aforesaid 80-acre units.

CASE 3919: Application of Sunray DX Oil Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Bough "C" zone of the Pennsylvanian formation underlying the SE/4 of Section 17, Township 10 South, Range 34 East, Vada-Pennsylvanian Pool, Lea County, New Mexico. Said acreage to be dedicated to Signal Oil Company's State AP Well No. 1 located in Unit I of said Section 17. In the alternative applicant seeks approval of a non-standard proration unit comprising the S/2 SE/4 of said Section 17 and the N/2 NE/4 of Section 20, said Township and Range, said unit to be dedicated to applicant's New Mexico "AW" Well No. 1 located in the NE/4 NE/4 of said Section 20.

CASE 3912: Application of American Petrofina Company of Texas for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres, Glorieta, and Abo formations in the open-hole interval from approximately 4211 feet to 8690 feet in its Federal "C" Well No. 2 located in

(Case 3912 continued)

Unit E of Section 21, Township 8 South, Range 36 East, South Prairie-Cisco Pool, Roosevelt County, New Mexico.

CASE 3913: Application of Pan American Petroleum Corporation for salt water disposal, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Pennsylvanian "D" formation in the perforated interval from 6267 feet to 6286 feet in its Navajo Tribal "U" Well No. 1 located in Unit L of Section 21, Township 26 North, Range 18 West, Tocito Dome-Pennsylvanian "D" Pool, San Juan County, New Mexico. Applicant further seeks an administrative procedure whereby other wells in said pool may be approved for disposal purposes, if completed in a manner similar to the subject well, without the requirement of notice and hearing.

CASE 3914: Application of Texas Pacific Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers and Queen formations in the open-hole interval from approximately 3721 feet to 3995 feet in its State "A" a/c-2 Well No. 6 located in Unit B of Section 7, Township 22 South, Range 36 East, South Eunice Pool, Lea County, New Mexico.

CASE 3915: Application of Texas Pacific Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Pennsylvanian formation in the perforated interval from approximately 9570 feet to 9972 feet in its State "AH" Well No. 2 located in Unit N of Section 14, Township 12 South, Range 34 East, Ranger Lake Field, Lea County, New Mexico.

CASE 3916: Application of Texas Pacific Oil Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the perforated interval from approximately 6686 feet to 6830 in its Woolley Federal No. 1 located in Unit M of Section 21, Township 17 South, Range 30 East, Loco Hills-Abo Pool, Eddy County, New Mexico.

CASE 3917: Application of Agua, Inc., for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres and other formations in the interval from approximately 4530 feet to 6375 feet in its Corbin SWD Well No. G-31 located in the SW/4 NE/4 of Section 31, Township 17 South, Range 33 East, Corbin Field, Lea County, New Mexico.

- CASE 3920: Application of Kern County Land Company for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from approximately 4158 feet to 4233 feet in its Federal 23 Well No. 11 located in Unit F of Section 23, Township 7 South, Range 33 East, Chaveroo-San Andres Pool, Roosevelt County, New Mexico.
- CASE 3921: Application of Kern County Land Company for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from approximately 4165 feet to 4291 feet in its Federal 21 Well No. 3 located in Unit O of Section 21, Township 7 South, Range 33 East, Chaveroo-San Andres Pool, Roosevelt County, New Mexico.
- CASE 3922: Application of Tenneco Oil Company for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from approximately 4214 feet to 4344 feet in its State "V" Well No. 3 located in Unit K of Section 30, Township 7 South, Range 34 East, Chaveroo-San Andres Pool, Roosevelt County, New Mexico.
- CASE 3923: Application of Tenneco Oil Company for salt water injection, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to inject produced salt water into the Wolfcamp formation in the perforated interval from approximately 10642 feet to 10699 feet in its Kemnitz-Wolfcamp Unit Well No. 7 located in Unit O of Section 19, Township 16 South, Range 34 East, Kemnitz-Wolfcamp Pool, Lea County, New Mexico.

KERMIT OIL COMPANY

BOX 1665 MU 4-8780
MIDLAND, TEXAS 79701

October 28, 1968

Case 3922

New Mexico Oil Conservation Commission
P. O. Box 2088

Santa Fe, New Mexico 87501

Attention: Mr. D. S. Nutter

Re: Tenneco Oil Company
Salt Water Disposal
Application

Gentlemen:

We object to Tenneco Oil Company's application to inject salt water in their State "v" No. 3 as they want to inject into the zone in which we are producing on our State No. 1.

All correspondence regarding the above should be sent to the address below.

Yours truly,

KERMIT OIL COMPANY

Ellis H. McCawley

Ellis H. McCawley
Production Superintendent
P. O. Box 1021
Kermit, Texas
AC 915 JU 6-2000

EHMCC/pb

RAA



TENNECO OIL COMPANY • P. O. BOX 1031 • 1800 WILCO BUILDING • MIDLAND, TEXAS 79701

October 21, 1968

2 3922

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe
New Mexico 87501

ATTENTION: Mr. D. S. Nutter

RE: Salt Water Disposal Applications
Chaveroo Field, Roosevelt County,
and Kennitz Field, Lea County,
New Mexico.

Gentlemen:

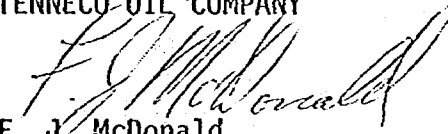
Attached are two applications, along with the necessary supporting data, to convert existing wells to salt water disposal. They are:

- (1) Tenneco's State "V" NO. 3 in the Chaveroo Field, Roosevelt County, New Mexico, which is now a producing oil well.
- (2) Tenneco's Kennitz Wolfcamp Unit Well No. 7 in the Kennitz Wolfcamp Unit, Lea County, New Mexico, is currently a gas injection well.

We request that these two wells be scheduled for hearing on November 7, 1968, as we discussed by phone with Mr. D. S. Nutter on Friday, October 18, 1968.

Very truly yours,

TENNECO OIL COMPANY


F. J. McDonald
District Superintendent

LMW:cw

cc: New Mexico State Engineer
State Capitol Building
Santa Fe, New Mexico

All Offset Operators

DOCKET MAILED

Date 10-25-68



NEW MEXICO OIL CONSERVATION COMMISSION
APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR Tenneco Oil Company		ADDRESS P. O. Box 1031 Midland, Texas 79701	
LEASE NAME State "V"	WELL NO. 3	FIELD Chaveroo	COUNTY Roosevelt
LOCATION UNIT LETTER <u>K</u> WELL IS LOCATED <u>2314</u> FEET FROM THE <u>South</u> LINE AND <u>330</u> FEET FROM THE <u>West</u> LINE, SECTION <u>30</u> TOWNSHIP <u>7-S</u> RANGE <u>34-E</u> NMPM.			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	8-5/8	387	140	Circulated	
INTERMEDIATE					
LONG STRING	4-1/2	4400	550	2090	Calculated
TUBING	2-1/2	4150	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Model R @ 4150 '+		

NAME OF PROPOSED INJECTION FORMATION San Andres		TOP OF FORMATION 3490	BOTTOM OF FORMATION Not Penetrated
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing	PERFORATIONS OR OPEN HOLES Perforations	PROPOSED INTERVAL(S) OF INJECTION 4214 - 4344	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil Well	HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? No	

LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH

DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 200	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None	DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA None
---	---	---

ANTICIPATED DAILY INJECTION VOLUME (BBL'S.) 200	MINIMUM 150	MAXIMUM 500	OPEN OR CLOSED TYPE SYSTEM Closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Pressure if needed	APPROX. PRESSURE (PSI) 1000
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE			WATER TO BE DISPOSED OF Yes	NATURAL WATER IN DISPOSAL ZONE Yes	ARE WATER ANALYSES ATTACHED? No

NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)
State of New Mexico

LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL

- Pan American Petroleum Corp. - P. O. Box 68, Hobbs, New Mexico 88240
- Kermit Oil Co. - P. O. Box 1665 - Midland, Texas 79701
- Kerr-McGee - P. O. Box 1347 - Odessa, Texas 79760
- Skelly Oil Co. - P. O. Box 730 - Hobbs, New Mexico 88240

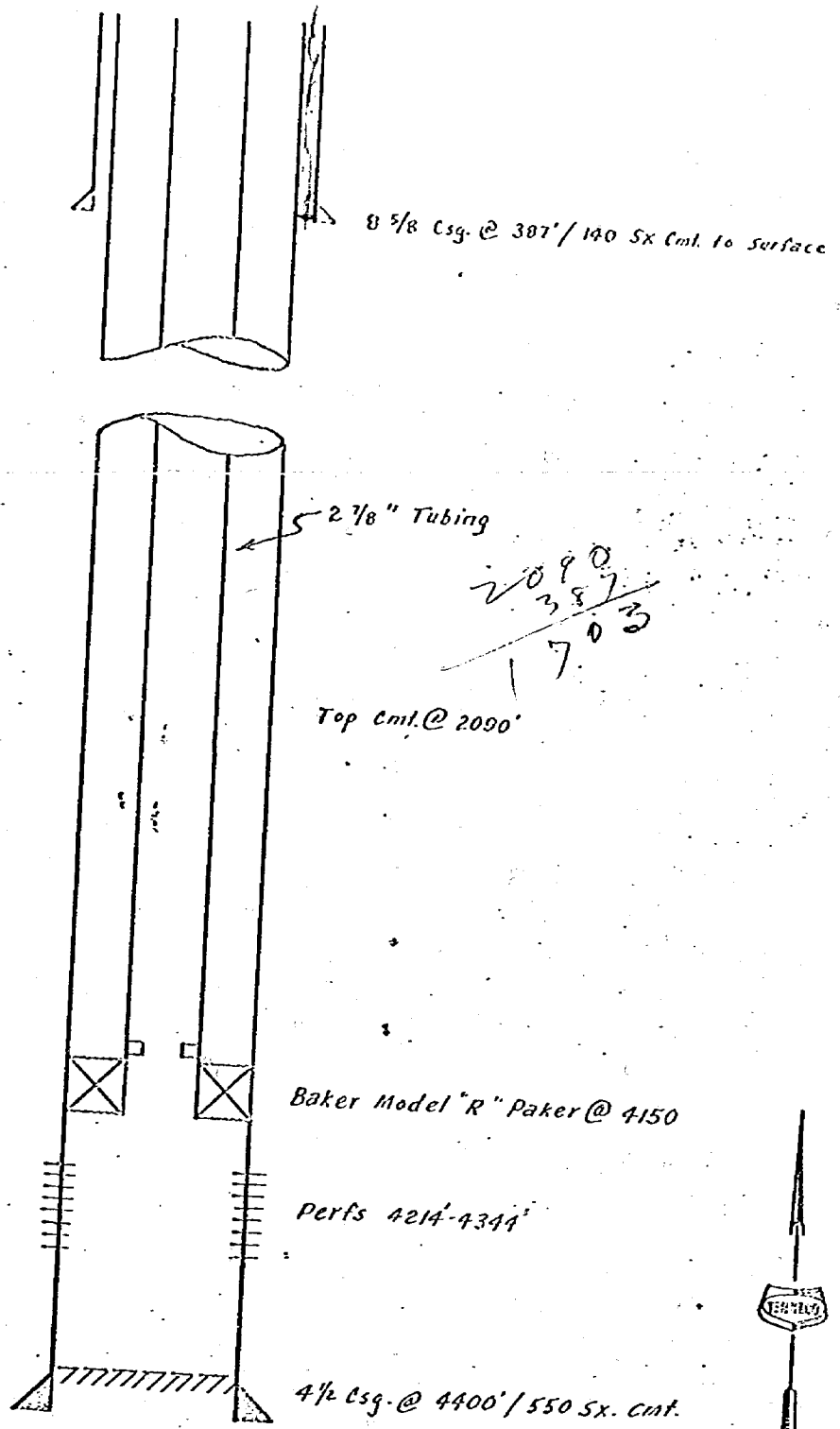
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?	SURFACE OWNER Yes	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	THE NEW MEXICO STATE ENGINEER Yes
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-D)	PLAT OF AREA Yes	ELECTRICAL LOG Yes	DIAGRAMMATIC SKETCH OF WELL Yes

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

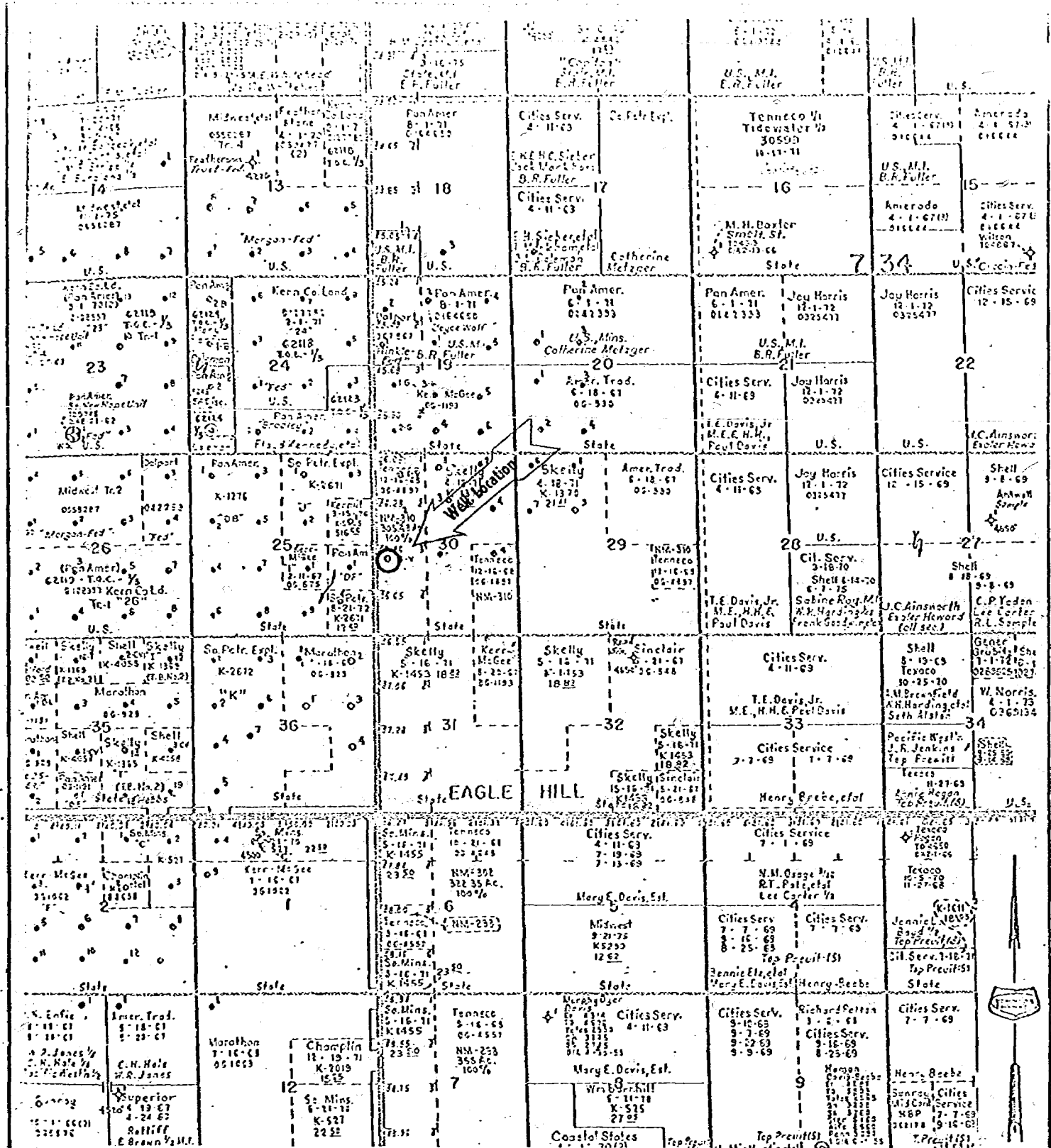
L. M. Williams M. Williams Production Engineer October 21, 1968
(Signature) (Title) (Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

Case 2922



TENNECO OIL COMPANY SUBSIDIARY OF TENNECO CORPORATION
CHAVEROO FIELD ROOSEVELT COUNTY, NEW MEXICO
Subsurface Schematic Proposed SWD Well State "V" Well No. 3
Case 3922



TENNECO OIL COMPANY
SUBSIDIARY OF TENNECO CORPORATION

CHAUVEROO FIELD
ROOSEVELT CO., NEW MEXICO

Proposed SWD Well
State "V" No. 3



Case 3927

4214 - 4344

WELLS
Shaw-Walkley

MAILED
 COPY

WELL: WELLS
 FIELD: WELLS
 COUNTY: WELLS STATE: WELLS
 LOCATION: WELLS
 SEC: WELLS TWP: WELLS RGE: WELLS
 COMPANY: WELLS
 Permanent Datum: WELLS Elev. WELLS
 Log Measured from: WELLS Ft. Above Permanent Datum
 Drilling Measured from: WELLS

Date: WELLS
 Run No.: WELLS
 Type Log: WELLS
 Depth: WELLS
 Depth - Longer: WELLS
 Depth - Longer Interval: WELLS
 Top Logged Interval: WELLS
 Type Fluid in Hole: WELLS
 Salinity Perm Cl.: WELLS
 Density Lb. Gal.: WELLS
 Level: WELLS
 Max. Rec. Temp. Deg. F.: WELLS
 Cor. Rod Time: WELLS
 Recorded by: WELLS
 Witnessed By: WELLS

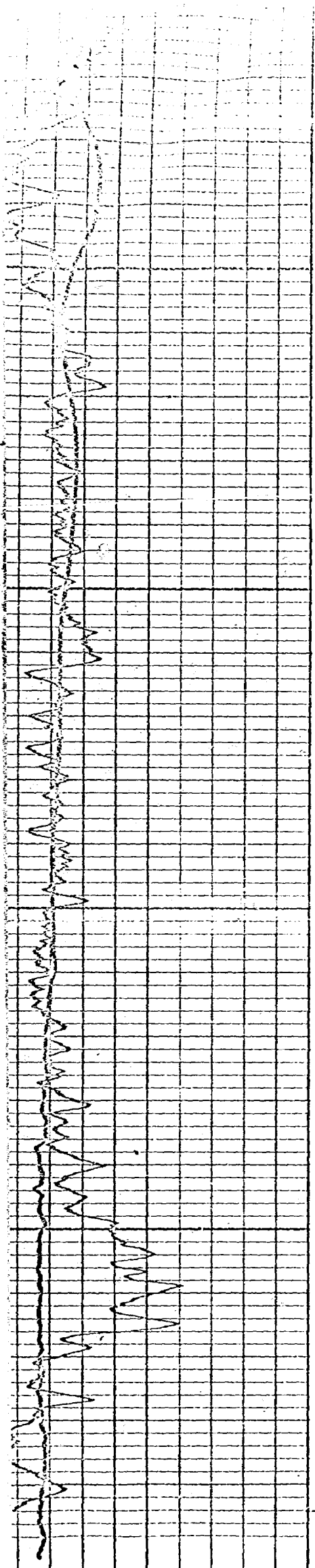
Bore Hole Record				Casing Record			
Run No.	From	To	Size	Wgt.	From	To	
1	0	80	8 1/8	50	0	80	2 3/8

Gamma Ray		Equipment Data	
Model No.	1304	Run No.	1
Model No.	358	Log Type	WELLS
Model No.	2451	Tool Model No.	WELLS
Model No.	20275	Diam.	5 1/2
Depth	0	Detect. Model No.	130
N. Source	1	Type	WELLS
		Length	5
		Source Model No.	WELLS
		Serial No.	WELLS
Truck No.	WELLS	Spacing	11
Truck No.	WELLS	Type	WELLS
Truck No.	WELLS	Strength	WELLS

Logging Data											
General		Gamma Ray					Neutron				
From	To	Speed Ft./Min.	T.C. Sec.	Sens. Settings	Zero Div. L or R	API G.R. Units Per Log Div.	T.C. Sec.	Sens. Settings	Zero Div. L or R	API N. Units Per Log Div.	
4400	4000	120	4.2	1638	1	10	2	100	12-15	10	
4400	4000	120	4.2	1238	1	10	2	100	12-18	10	
4400	4000	120	4.2	1638	1	10	2	100	12-18	10	
4400	4000	120	4.2	1638	1	10	2	100	12-18	10	
4400	4000	120	4.2	1638	1	10	2	100	12-15	10	

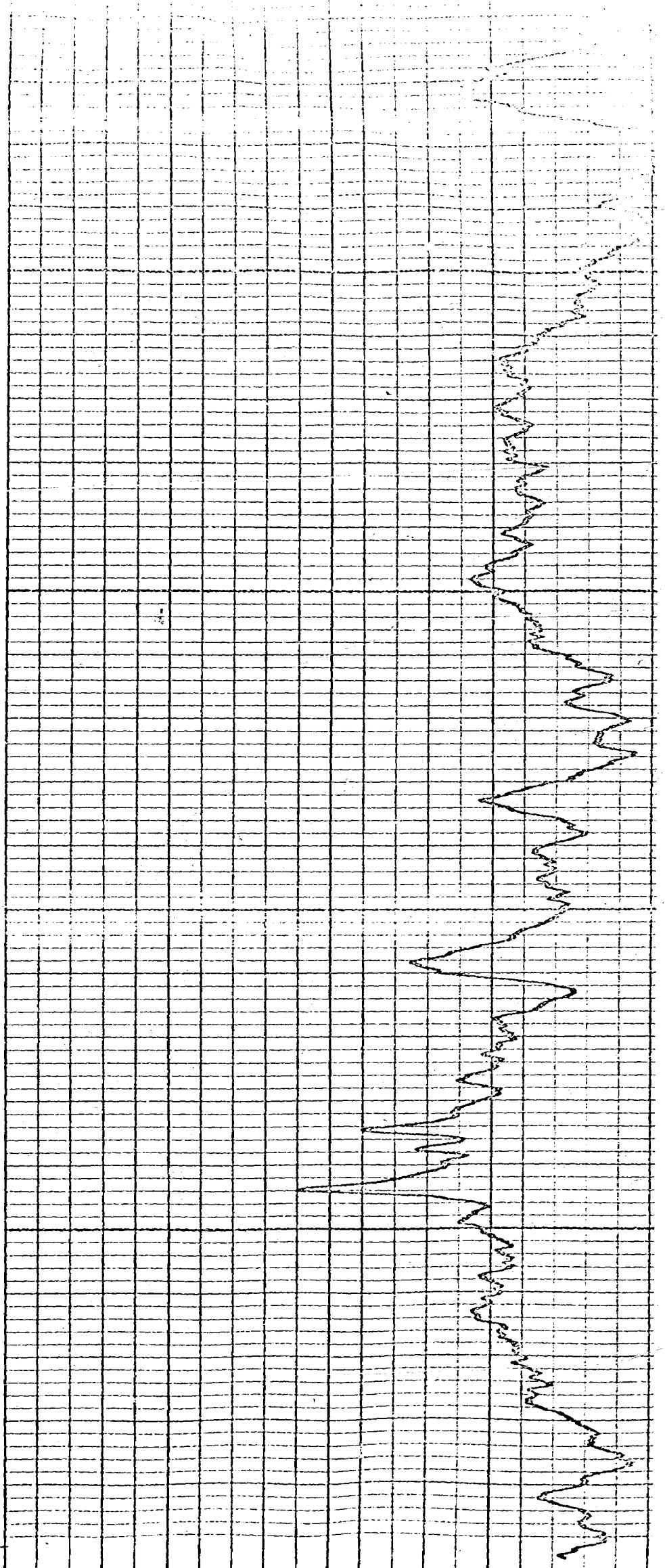
Reference literature:

GAMMA RAY & CALIPER	DEPTH	DENSITY
<p>→</p> <p>INTEGRATION INTENSITY INCREASES</p> <p><i>Core 3922</i></p>		



4200

4300





TOM F. HILL
Manager, Southwest Division
F. G. PRUTZMAN
Superintendent Operating Department

PRODUCTION DEPARTMENT SUN OIL COMPANY SOUTHLAND CENTER, P.O. BOX 2880, DALLAS, TEXAS 75221

October 28, 1968

*File
Case 3920 or
3921*

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

ATTENTION: MR. D. S. NUTTER

Gentlemen:

We have been informed of the applications of Tenneco Oil Company to convert their Federal "23" Well #11 and Federal "21" Well #3 to salt water disposal service. As the operator of the western offset to the Federal "21" lease, we hereby waive any objection to this conversion.

Yours very truly,

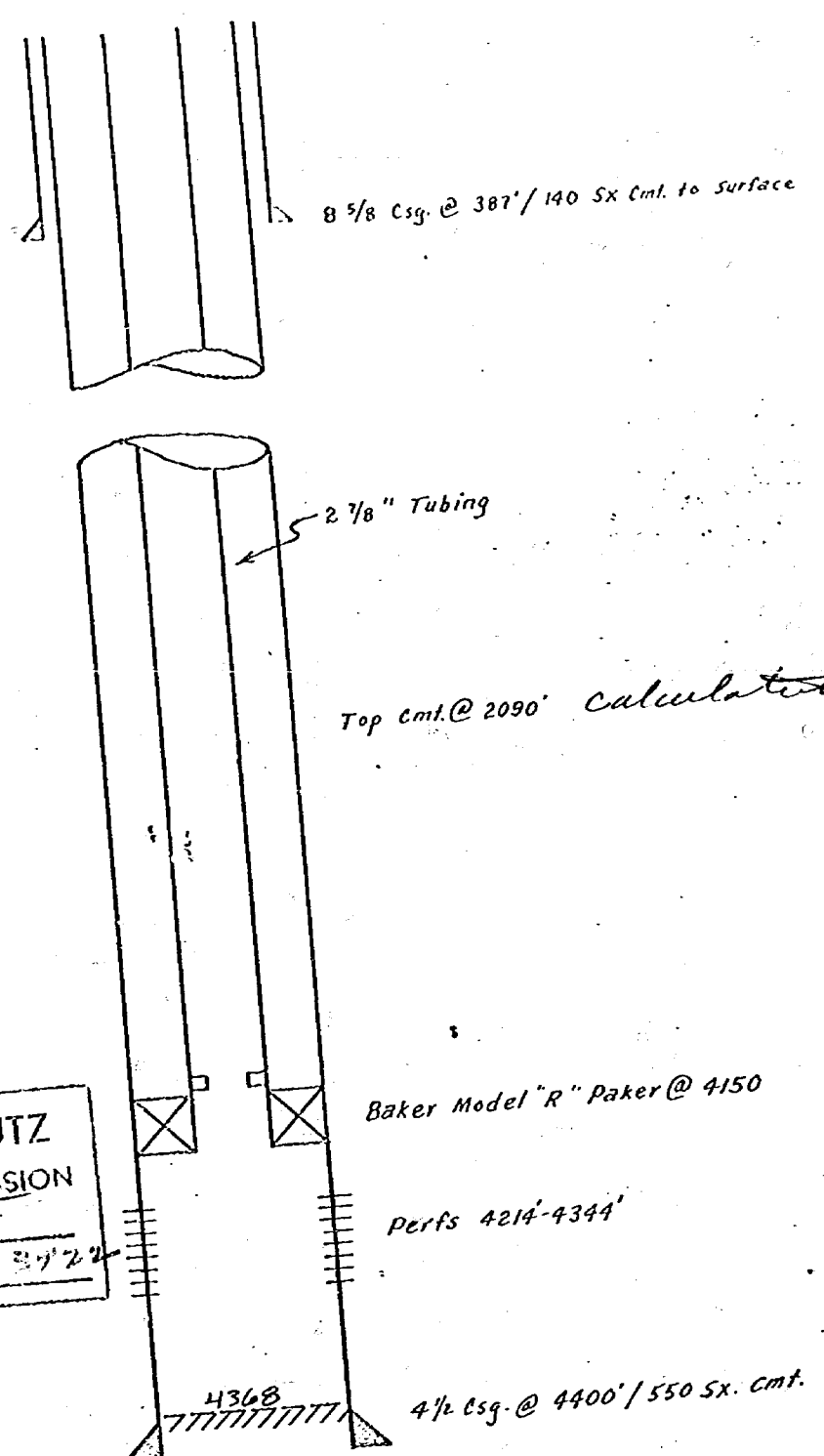
SUN OIL COMPANY

A. R. Ballou

By: *Granville Dutton*
Granville Dutton

GD:jv

cc: Mr. F. J. McDonald
District Superintendent
Tenneco Oil Company
P. O. Box 1031
1800 Wilco Building
Midland, Texas 79701



BEFORE EXAMINER UTZ
 OIL CONSERVATION COMMISSION
Lyell EXHIBIT NO. 5
 CASE NO. 3920, 3921, 3922

TENNECO OIL COMPANY
 SUBSIDIARY OF TENNECO CORPORATION
 CHAVEROO FIELD
 ROOSEVELT COUNTY, NEW MEXICO
 Subsurface Schematic
 Proposed SWD Well
 State "V" Well No. 3

Lyell

4214 - 4344

WELLS
Downing

MAILED
 COPY

LOG NO. _____

COMPANY Conoco

WELL 14-10-10

FIELD 14-10-10

COUNTY STARR STATE NEW YORK

LOCATION: 20 14 10 10 CONFIN

SEC 2 TWP 7 RGE 3

Measurement Datum Sea Level Elev. 757

Log Measured from 100 Ft. Above Permanent Datum

Drilling Measured from 100

Other Services _____

Elevations: KB 400 DF 400 CL 400

Date	Run No.	Log Type
1-1-50	1	Gamma Ray
Depth	Depth	Depth
100	100	100
Bottom Logged Interval	Bottom Logged Interval	Bottom Logged Interval
100-110	100-110	100-110
Top Logged Interval	Top Logged Interval	Top Logged Interval
100-100	100-100	100-100
Fluid in Hole	Fluid in Hole	Fluid in Hole
Oil	Oil	Oil
Specific Grav. Oil	Specific Grav. Oil	Specific Grav. Oil
1.0	1.0	1.0
Density Log Gal.	Density Log Gal.	Density Log Gal.
1.0	1.0	1.0
Level	Level	Level
100	100	100
Temperature, Deg. F	Temperature, Deg. F	Temperature, Deg. F
100	100	100
Run Time	Run Time	Run Time
100	100	100
Recorded by	Recorded by	Recorded by
<i>W. Downing</i>	<i>W. Downing</i>	<i>W. Downing</i>
Witnessed by	Witnessed by	Witnessed by

Bore Hole Record				Casing Record			
Run No.	Bit	From	To	Size	Wgt.	From	To
1		100	110	8 9/8		100	110

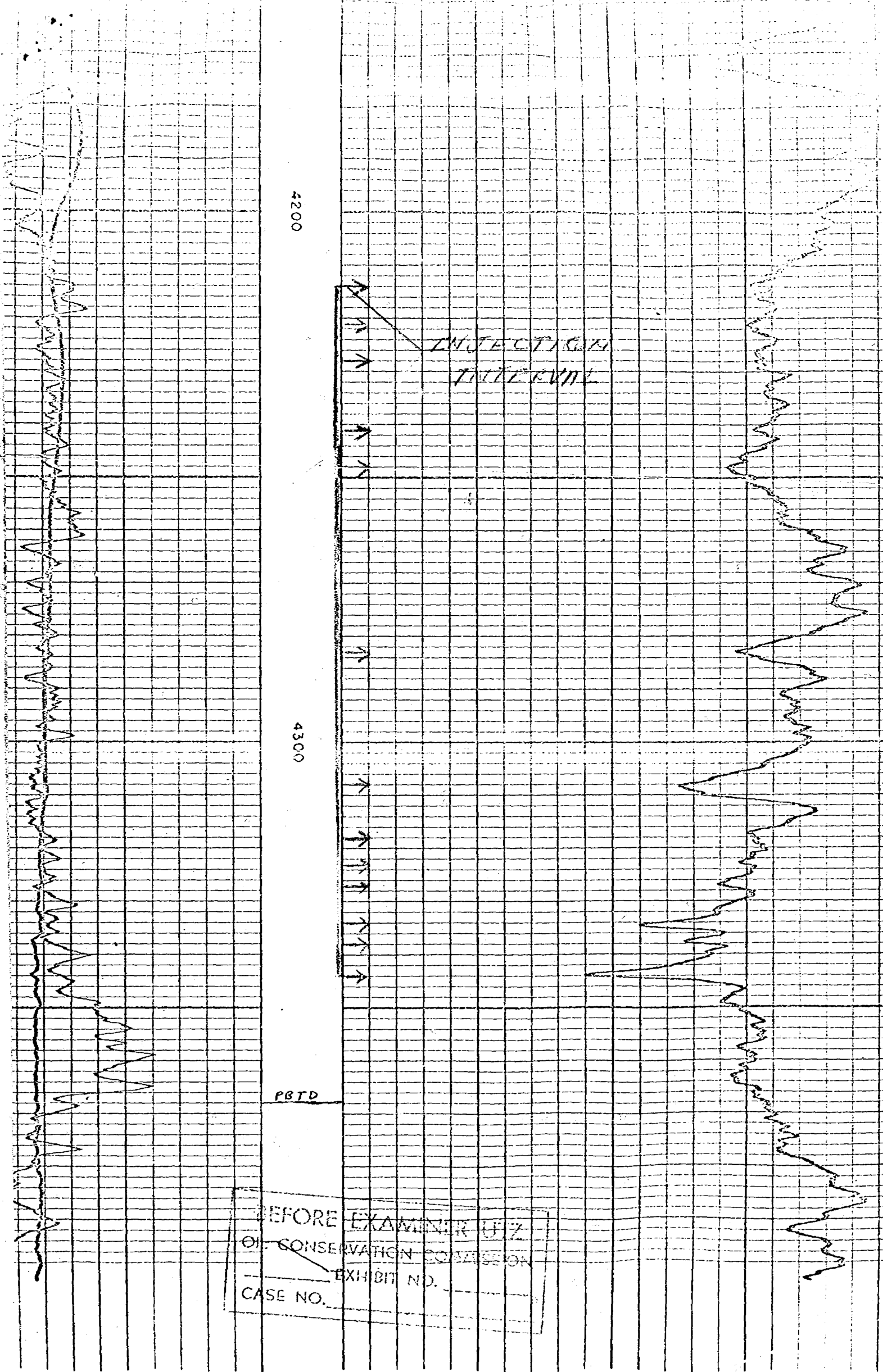
Gamma Ray		Equipment Data	
Model No.	1304	Run No.	1
Model No.	358	Log Type	Gamma Ray
Model No.	12451	Tool Model No.	100
Model No.	100	Diam.	5 1/2
Model No.	100	Detect. Model No.	100
Model No.	100	Type	Gamma Ray
Model No.	100	Length	100
Model No.	100	Source Model No.	100
Model No.	100	Serial No.	100
Model No.	100	Spacing	100
Model No.	100	Type	Gamma Ray
Model No.	100	Strength	100

Logging Data										
General			Gamma Ray				Neutron			
From	To	Speed Ft./Min.	T.C. Sec.	Sens. Settings	Zero Div. L or R	API G.R. Units Per Log Div.	T.C. Sec.	Sens. Settings	Zero Div. L or R	API N. Units Per Log Div.
4400	4000	100	4.3	1638		10	2	100	10-15	10
4400	4000	100	4.2	1238		10	2	100	10-15	10
4400	4000	100	4.2	1638		10	2	100	10-15	10
4400	4000	100	4.2	1638		10	2	100	10-15	10
4400	4000	100	4.2	1638		10	2	100	10-15	10

BEFORE EXAMINER-UTZ
 OIL CONSERVATION COMMISSION
 Appl. EXHIBIT NO. 8
 CASE NO. 3920, 3921, 3922

GAMMA RAY & CALIPER	DEPTH	DENSITY

↑ RADIATION INTENSITY INCREASES



4200

INJECTION
INTERVAL

4300

PBD

BEFORE EXAMINER USE
OF CONSERVATION COMMISSION
EXHIBIT NO.
CASE NO.

DRAFT

GMH/esr
11-15-68

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

②
IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

SMJ *ALP*
CASE No. 3922

Order No. R-3577

APPLICATION OF TENNECO OIL COMPANY
FOR SALT WATER DISPOSAL, ROOSEVELT
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 7, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of November, 1968, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Tenneco Oil Company, is the owner and operator of the State "V" Well No. 3, located in Unit K of Section 30, Township 7 South, Range 34 East, NMPM, Chaveroo-San Andres Pool, Roosevelt County, New Mexico.

(3) That the applicant proposes to utilize said well to inject produced salt water into the San Andres formation, with injection into the perforated interval from approximately 4214 feet to 4344 feet.

(4) That the subject well should be classified as a pressure maintenance project injection well.

(5) That the subject pressure maintenance project is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to institute a pressure maintenance project in the Chaveroo-San Andres Pool, Roosevelt County, New Mexico, by the injection of water into the San Andres formation through its State "V" Well No. 3, located in Unit K of Section 30, Township 7 South, Range 34 East, NMPM, Roosevelt County, New Mexico.

(2) That said injection should be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 4150 feet, and into the perforated interval from approximately 4214 feet to 4344 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus in order to determine leakage in the tubing, casing, or packer.

(3) That the subject pressure maintenance project is hereby designated the Tenneco State Pressure Maintenance Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(4) That monthly progress reports of the pressure maintenance project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

-3-

CASE No. 3922

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

Tenneco Oil Co

disprove prod acct wks
in San Andres Form
in perf interval from
4214 to 4344 in its
State V well No 3 loc
in Unit K Sec 30
T 7 S R 34 E
Roosevelt Co.

Chavero

2314 RSV
2330 RSV