STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
5 January 1983

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company for salt water disposal, Eddy County, New Mexico. CASE 7766

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: James Bayard Grant, Esq.
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# I N D E X



# E X H I B I T S

MR. STOGNER: We'll call next Case Number 7766.

MR. PEARCE: That case is on the application of Tenneco Oil Company for salt water disposal, Eddy County, New Mexico.

MR. GRANT: James B. Grant, of Kellahin and Kellahin, appearing for the applicant.

I have one witness to be sworn, Mr. Examiner.

(Witness sworn.)

ULISES ZAMORA

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

DIRECT EXAMINATION

BY MR. GRANT:

MR. GRANT: Before beginning, Mr. Examiner, I have a substitute application at this time which contains additional information requested by the Division, as well as some corrections to typographical errors which were in the original application submitted.

Q. Please state your name and place of residence.

A. My name is Ulises Zamora and I reside in San Antonio, Texas.

Q. By whom are you employed and in what capacity?

A. I'm employed by Tenneco Oil, the Southwestern Division, as a production engineer.

Q. Please describe briefly your qualifications as a production engineer by way of education and work experience.

A. I attended Texas A & M University where I received a Bachelor of Science degree in petroleum engineering. I graduated in May of '81, and since then I have been employed by Tenneco Oil as a production engineer.

Q. Have you been authorized to testify on behalf of the applicant in this hearing?

A. Yes, I have.

Q. What is the nature of the application?

A. To convert a producing well to a salt water disposal well.

Q. As to the proposed injection well, please state the lease name and the location of the well.

A. The lease name is the Jones Federal and it is located in Unit K. That's 1650 feet from the south line, 1650 feet from the west line of Section 23, Township 19 South,

Range 31 East, in Eddy County, New Mexico.

Q. Have you prepared an exhibit showing the locatio of the proposed injection well, together with the identification of all wells and leases within two miles of the proposed well?

A. Yes, I have.

Q. I hand you what has been marked as Exhibit Number One and ask you to identify it.

A. This is a map showing the location of the proposed injection well, as well as all the wells and leases located within two miles of this proposed injection well.

Q. Is the proposed injection well located at the center of the circles on Exhibit Number One?

A. Yes, it is.

Q. Was this exhibit prepared by you or under your supervision and direction?

A. Yes, it was.

MR. GRANT: We offer the exhibit.

MR. STOGNER: Exhibit One will be admitted into evidence.

Q. Please describe the casing string used and other pertinent data concerning cementing and top determination.

A. Okay. Beginning with the surface string,

it's 13-3/8ths inch, 48-pound. It was set at 514 feet with 500 sacks of cement in a 17-1/4 inch hole. The cement is at surface. It was circulated to surface.

The intermediate string is 8-5/8ths inch, 32 and 24 pound. It was set at 4,005 feet with 250 sacks of cement at the bottom, plus a DV tool at 2,604 feet with 1900 sacks of cement. The top of the cement is at 2200 feet and this is determined by a temperature survey, and it's an 11-inch hole.

Finally, the production string is a 5-1/2 inch, 17 and 20 pound casing set at 12,785 feet with 900 sacks of cement in a 7-7/8ths inch hole. The top of cement is at 7,420 feet, and it was determined by cement bond log.

Q. Please describe the tubing to be used in the subject well.

A. The tubing is 2-3/8ths inch N-80 8-round, external upset tubing, which will be internally plastic coated.

Q. What packer is proposed and where will it be set?

A. The packer, the proposed packer is a 5-1/2 inch Baker Locset packer and it will be set at 11,042 feet.

Q. Please identify the injection formation and the name of the field.

A. The injection formation is the Strawn and the field name is Lusk.

Q. Are you proposing injection through perforations?

A. Yes, I am.

Q. What is the proposed injection interval?

A. The proposed injection interval is from 11,174 feet to 11,236 feet.

Q. What was the original purpose of this well?

A. The original purpose was for it to be an oil well.

Q. Was the well completed through perforations or was it completed open hole?

A. It was completed through perforations.

Q. What were the perforated intervals?

A. Besides the injection interval which I've just mentioned, the other perforated interval includes 12,669 feet to 12,689 feet; 12,510 feet to 12,528 feet; 12,422 feet to 12,434 feet; and from 11,484 feet to 11,507 feet; 11,466 feet to 11,470 feet; 11,368 feet to 11,376 feet; 11, 357 feet to 11,364 feet; 11,308 feet to 11,328 feet; and finally, 11,292 feet to 11,297 feet.

Q. Would you please state again the very first interval that was perforated to which you testified?

A. Okay, that interval was 11,174 feet to 11,236 feet.

Q. Okay, I'm sorry, it was the 12,679 foot interval I was speaking of.

A. Okay.

Q. I think you misspoke yourself is all.

A. Okay.

Q. Would you repeat that, please?

A. Okay. That was from 12,679 feet to 12,689 feet.

Q. Okay. How were those perforations sealed off?

A. Okay, a cast iron bridge plug was set at 12,365 feet and this, in effect, sealed off perforations below this setting depth. Then a Baker K cast iron cement retainer was set at 11,273 feet, and it was squeezed below this retainer with 50 sacks of cement. This, in effect, sealed off all perforations below this retainer setting depth.

Q. What's the next higher oil or gas zone in the area and what is its depth?

A. The next higher oil or gas zone in the area is the Wolfcamp formation and the depth to the top of the formation is 10,440 feet.

Q. What's the next lower oil or gas zone in the

area and what is its depth?

A. The next lower oil or gas zone in the area is the Morrow formation, and the depth to the top of the Morrow is 12,240 feet.

Q. Have you prepared an exhibit which sets forth the well data to which you have just testified?

A. Yes, I have.

Q. I hand you what has been marked as Exhibit Number Two and ask you to identify it.

A. This exhibit details all of the well data, both in schematic and tabular form, to which I have just testified.

Q. Was this exhibit prepared by you or under your supervision and direction?

A. Yes, it was.

MR. GRANT: We offer the Exhibit, Exhibit Two.

MR. STOGNER: This exhibit will be admitted in evidence.

Q. Who is the owner of the surface of the land on which the Jones Federal No. 1 is located?

A. The land belongs to the Federal authorities but the surface lessees are Mr. M. D. Irwin and Mr. J. Y. McAdams, Junior.

Q. Have Mr. McAdams and Mr. Irwin been notified

by certified mail?

A. Yes, they have.

Q. Who's the leasehold operator within a half mile of the Jone Federal No. 1?

A. It would be Coquina Oil Corporation.

Q. Has Coquina Oil Corporation been notified by certified mail?

A. Yes, they have.

Q. I hand you what has been marked as Exhibit Number Three and ask if you would identify that.

A. This is a copy of the names, addresses, and phone numbers of the surface lessees, the leasehold operator, in the area of review, along with a copy of certified mail receipts showing notification to each of these.

MR. GRANT: We offer Exhibit Number Three.

MR. STOGNER: Exhibit Number Three will be admitted to evidence.

Q. Is this an expansion of an existing project?

A. No.

Q. Again, what is the location and the name of the proposed injection well?

A. The name of the proposed injection well is the Jones Federal No. 1, and it is located on Unit K, or 1650 feet from the south line, 1650 feet from the west line, of

Section 23, Township 19 South, Range 31 East, Eddy County, New Mexico.

Q. Have you prepared a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone?

A. Yes, I have.

Q. What is the proposed injection zone?

A. The Strawn.

Q. Please identify the wells which do penetrate the proposed injection zone on Exhibit Number One.

A. Okay. The Barton Federal No. 2 is approximately one-half mile to the southwest of the proposed injection well and the Jones "B" Federal No. 4 is one-half mile south of the proposed injection well.

Q. For each of the Barton Federal No. 2 and the Jones "B" Federal No. 4, please describe its type, construction, the date it was drilled, the location, the depth, and its record of completion.

A. Okay. Beginning with the Barton Federal No. 2 Well, the well type of oil; under construction there is, as far as the casing string goes, 13-3/8ths inch casing set at 708 feet with cement top at the surface; the intermediate string is 8-5/8ths casing set at 3964 feet with the cement top being at 2000 feet; the production string is 4-1/2 inch and

it was set at 11,377 feet with the cement top being at 9620 feet. Open perforations are from 11,312 feet to 11,322 feet; squeezed perforations is none.

Date drilled was February 1st, 1965. It is located at 660 feet from the south line, 660 feet from the east line, Township 19 South, Range 31 East, Section 22, in Eddy County, New Mexico.

The depth of this well is 11,378 feet. Record of completion is on March 19th, 1965.

Under the Jones "B" Federal No. 4, the well type is oil, yet it turned out to be a dry hole.

The construction, 13-3/8ths inch casing set at 690 feet with the cement top at the surface; the intermediate string of 8-5/8ths inch is set at 3,213 feet, the cement top being at 2000 feet. There was no production casing set. There are no open perforations, no squeezed perforations.

The date drilled was August 21st, 1965. It is located at 660 feet from the north line, 990 feet from the west line, Township 19 South, Range 31 East, Section 26, Eddy County, New Mexico.

The depth of this well is 11,539 feet and the record of completion is September 22nd, 1965.

Q. Are both these wells now plugged and abandoned?

A. Yes, they are.

Q. Have you prepared schematic diagrams illustrating the plugging details of those two wells?

A. Yes, I have.

Q. Upon what information did you rely in preparing those schematics?

A. Since both these wells are Tenneco wells, I used the information taken from Tenneco well files, as well as from plugging reports that were submitted to the USGS.

Q. Has that data, together with the schematics and the supporting USGS reports, been submitted with the application?

A. Yes, sir, it has.

Q. What is the proposed average injection rate of the proposed injection well?

A. The proposed average injection rate will be 450 barrels per day.

The proposed maximum injection rate of 600 barrels per day.

Q. Is this to be an open or a closed system?

A. Closed.

Q. What are the average and maximum injection pressures which you proposed?

A. The proposed average injection pressure would

be 500 psi and the proposed maximum injection pressure will be 2200 psi.

Q. As a matter of fact, are you anticipating that this well will take water under vacuum?

A. Yes.

Q. What are the sources of the injection fluid?

A. The sources are from produced water from the Strawn formation that will be taken from the Jones Federal No. 2 Well, the Jones "B" Lease, and the Jones "C" lease.

Q. Have you caused a laboratory analysis, water analysis, of the fluids from these two wells to be prepared?

A. Yes, I have.

Q. By whom was the analysis prepared?

A. The analysis was prepared by Halliburton from Hobbs.

Q. I hand you what has been marked as Exhibit Number Four and ask you to identify it.

A. This is a water analysis done by Halliburton at Tenneco's request on two of the wells from which we will be taking produced water to inject into the proposed well.

MR. GRANT: I offer Exhibit Four.

MR. STOGNER: Exhibit Four will be admitted in evidence.

Q. Is the disposal zone productive of oil or gas

within a mile of the proposed disposal well?

A. Yes, it is.

Q. What geologic data do you have on the injection zone?

A. Okay, it is a Strawn limestone of Pennsylvanian age and belonging to the Desmonian Series. It is 60-foot thick and it is at a depth of 11,174 feet.

Q. What's the geologic name and depth to bottom of all underground sources of drinking water overlying the proposed injection zone?

A. It is the Triassic Dockum Group and it is found at a maximum depth of 500 feet.

Q. Are there any known sources immediately underlying the injection interval?

A. No, there isn't.

Q. Was this geologic data submitted with your application?

A. Yes, it was.

Q. Do you -- excuse me, do you propose a stimulation program?

A. No.

Q. Have well logs for the Jones Federal No. 1 been previously filed with the Division?

A. Yes, they have, and I was informed by the

State that they had lost them.

Q. Have you brought duplicates of those well logs to --

A. Because of that I brought duplicate copies.

Q. All right.

MR. GRANT: While these are not marked as an exhibit, Mr. Examiner, we would like to tender them at this time as duplicates of previously submitted well logs, which can't seem to be located.

Q. Do you have additional well log or test data to submit to the Division at this time?

A. Yes, I have.

Q. I will hand you what has been marked as Exhibit Number Five and ask you to identify that.

A. This is the well log and test data on the Jones Federal 1, as previously -- as well as those previously submitted logs.

Q. All right. And are these from the official files and records of Tenneco Oil Company?

A. Yes, they are.

MR. GRANT: We offer Exhibit Number Five.

MR. STOGNER: Exhibit Number Five will be admitted into evidence.

Q. Are there any fresh water wells producing

within a mile of the proposed injection well?

A. Yes, there is.

Q. Is a chemical analysis of the water from that well available?

A. Yes, it is.

Q. I hand you what has been marked Exhibit Number Six and ask you to identify that.

A. This is a water analysis on the fresh water well that was done by Halliburton on December 29th, 1982, at the request of Tenneco.

MR. GRANT: We offer Exhibit Number Six.

MR. STOGNER: Exhibit Number Six will be admitted into evidence.

Q. Has available engineering and geological data been examined to determine if open faults or other hydrologic connections exist between the disposal zone and any underground source of drinking water?

A. Yes.

Q. Were any found?

A. No.

Q. Has a statement to that effect been submitted to the Division with your application?

A. Yes, it has.

Q. Do you have anything further to offer by way

of testimony or exhibits to the Division in support of your application at this time?

A. I have a cement bond log of this well, which shows the top of the cement.

Q. Okay.

MR. GRANT: Does the Division wish a copy of this log?

MR. STOGNER: Yes, please, yes, we do.

Q. Has this been previously filed with the Division?

A. It's been previously filed but I think it was lost, also.

MR. GRANT: This -- we will not mark this as an exhibit, if it's all right with --

MR. STOGNER: Yes, I understand.

MR. GRANT: We'll just submit it as an exhibit previously submitted.

We tender the exhibit -- or the witness.

CROSS EXAMINATION

BY MR. STOGNER:

Q. Mr. Zamora.

A. Yes, sir.

Q. What type of pressure limiting device will be

used in this well?

A. We're using a triplex pump that will be -- will have a maximum pressure, injection pressure of 2200 pounds.

MR. JOHNSON: What regulates the pressure?

A. There's a pressure regulator on that pump that can be adjusted.

Q. So it will be adjusted to 2200 pounds?

A. To a maximum of 2200 pounds.

Q. You said all the offsetting -- all the operators within a half mile radius were notified, and you said that was Coquina?

A. Coquina was the only offset operator within that area of review.

Q. The map shows Tenneco and Conoco, and Coastal States on the map. Are they farmed-out --

A. Right.

Q. -- to Tenneco? Okay. Are the supply wells, the three supply wells that you mentioned located within the area that's covered by this map?

A. Yes. It's covered within -- it's within a mile of that well.

Q. Which ones are they? Locate them on the map.

A. Okay. It's on Section 27, okay, it's 710

feet from the north line and 1980 feet from the east line.

Q. And which one is that one, the Jones Federal?

A. No, it's a Duncan Federal Lease there with a plugged well, No. 1, on that north --

Q. Uh-huh.

A. So it's 50 feet south of that plugged well. That's where the water well is at.

Q. That's where the water well --

A. Right.

Q. -- the fresh water well?

A. The fresh water well.

Q. Okay, how about the supply wells that will be injecting into this well, are they located on that map?

A. Yes, sir, located, and they will be found in Section 26 on that northeast corner, No. 3.

Q. And which one is this one?

A. That is Jones -- I'm sorry, no, sir, that's not right.

On that same Section 23 on the southeast corner, that 3-B?

Q. Okay.

A. That's the Jones "B" 3, and then in Section 25 in the northeast section of that, the B-2.

Q. The northeast or the northwest?

A. I'm sorry, northwest.

Q. Okay.

A. And then in Section 24 in that southwestern quadrant, 1-C.

And in Section 25 in the northeast quadrant, the Jones Federal No. 2.

Q. Now your map shows some other wells within a half mile radius of this proposed disposal well. Do you have the total depth on those?

A. Yes. In fact, I brought scout tickets on every well that fell within that area of review, which I can submit to you all here, and which list the total depths and construction and everything.

MR. GRANT: Would you prefer the witness to testify as to the TD's on all those wells?

MR. STOGNER: Why don't you do that, please?

MR. GRANT: Just go through those.

A. Okay. Let's start with Section -- let's see, 22. Okay, and there's the Barton Federal No. 1, which is in the northeast quadrant, and the total depth on that one is 2450 feet.

And the Barton Federal No. 2 we've already mentioned.

So let's go to Section 23 and the Jones Fed-

eral No. 2, which is located 1980 from the north and 1980 from the west. The total depth on that one is 2431 feet.

On the Jones Federal 3, which is right next to that, 1980 from the north and 990 from the west, the total depth on that one is 3092 feet.

And on the Jones Federal 23 No. 2, which is 1980 from the south and 660 from the west, the total depth there is 2481 feet.

And then we've covered the other wells.

MR. STOGNER: That's all the questions I have for this witness. Is there any other questions?

MR. CARPENTER: I have a question. My name is Andrew Carpenter, Bureau of Land Management, Albuquerque.

QUESTIONS BY MR. CARPENTER:

Q. I'd like to ask Mr. Zamora if he submitted this data to our office in Roswell?

A. Yes, sir, in fact we mailed it today.

Q. Oh, they haven't gotten it yet?

A. They haven't gotten it.

Q. Okay, we haven't had a chance to review it yet.

A. Right.

Q. I just wanted to make sure you did. They

could have received it today in Roswell?

A. Well, we're mailing it today --

Q. Oh, you're mailing it today.

A. -- from San Antonio, so it will probably be three days before Roswell gets it.

Q. Okay, we'll tell them then.

A. Okay.

Q. Thank you.

MR. GRANT: We would ask that this application be left open until all notified persons have had an opportunity to respond or object to this.

MR. STOGNER: Are there any other questions to come before Mr. Zamora? The witness may be excused.

Will there be anything further to come before case Number 7766?

MR. GRANT: Applicant has nothing further to offer.

MR. STOGNER: If not, this case will be -- the record on this case will be open, left open for ten days.

(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 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. 7766, heard by me on January 5, 1983.

Michael E. Stogner, Examiner
Oil Conservation Division

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