STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco, Inc., for salt water disposal, Lea County, New Mexico. Case 10095

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R. CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

September 19, 1990

ORIGINAL

CUMBRE COURT REPORTING
(505)984-2244

A P P E A R A N C E S

FOR THE DIVISION:	ROBERT G. STOVALL Attorney at Law Legal Counsel to the Division State Land Office Building Santa Fe, New Mexico 87501
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FOR THE APPLICANT:	WILLIAM F. CARR, ESQ. CAMPBELL & BLACK, P.A. Post Office Box 2208 Santa Fe, New Mexico 87504-2208

I N D E X

E X H I B I T S

P R O C E E D I N G S

HEARING EXAMINER: At this time we'll call Case 10095.

MR. STOVALL: Application of Texaco, Inc. for salt water disposal, Lea County, New Mexico.

HEARING EXAMINER: Are there appearances in this case?

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm Campbell & Black, P.A. of Santa Fe. I represent Texaco, Inc. and I have one witness.

HEARING EXAMINER: Are there any other appearances?

Will the witness please stand to be sworn in.

GLENN CARTER,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARR:

Q. Will you state your full name for the record, please.

A. Glenn Carter.

Q. Mr. Carter, where do you reside?

A. Hobbs, New Mexico.

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

A. Texaco U.S.A. as a production engineer.

Q. Have you previously testified before the Oil

Conservation Division?

A. Yes, I have.

Q. At the time of that testimony were your credentials as a petroleum engineer accepted and made a matter of record?

A. They were.

Q. Is your area, geographic area of responsibility with Texaco include the portion of Southeastern New Mexico involved in this case?

A. Yes, it does.

Q. Are you familiar with the application filed in this case?

A. Yes, I am.

Q. Are you familiar with the proposal to convert the subject well to disposal?

A. Yes.

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

HEARING EXAMINER: They are.

Q. (BY MR. CARR) Mr. Carter, would you briefly state what Texaco seeks with this application.

A. Texaco seeks authority to dispose of produced water by injection into the Devonian in the New Mexico BO State No. 2.

(Thereupon, Exhibit 1 was marked for identification.)

Q. Could you identify for the Examiner what has been marked as Texaco Exhibit No. 1.

A. Yes. The Form C-108 with the necessary attachments.

Q. What pool are you proposing to inject into?

A. The Moore-Devonian.

Q. When was this well originally completed?

A. It was originally completed in 1953 as an oil producer.

Q. What is the current status of this well?

A. It's a shut-in oil well.

Q. When was it shut in?

A. Last month.

Q. And prior to the time you shut the well in what was its producing rate?

A. Approximately nine barrels of oil a day, 600 barrels of water a day.

Q. Why are you proposing to utilize this particular well for disposal purposes?

A. Because this well is the best candidate in the field structurewise, and the field is uneconomical to produce without a disposal well.

Q. At the present time what is the status of the field?

A. The field is shut in.

Q. And when was it shut in?

A. Approximately two months ago.

Q. And what caused the field to be shut in?

A. We had a casing leak in a disposal well at that time and we shut it in to repair that casing leak.

Q. And so what you are doing is trying to find an alternative disposal well so you can put the field back on production?

A. That's correct.

Q. Let's go to the plat contained in Exhibit No. 1, which is on page three of this exhibit. I'd ask you to review that for the Examiner.

A. This is a lease ownership map of the area. There is two circles marked on the map, the center of both circles is the proposed salt water disposal well New Mexico BO State No. 2. The smaller circle is a one-half mile radius which is the area of review in this case. The outer diameter circle is two mile radius. And all the wells have been updated and are shown on this map.

Q. So this shows all current wells that penetrate the injection zone within two miles?

A. Yes, it does.

Q. It does also reflect lease ownership in the area?

A. That's correct.

Q. Could you refer to this exhibit now and identify for Mr. Catanach the tabular data on all wells within the area of review that are required by OCD Form C-108 Rule 700.

A. Yes. On page seven through 14 of attachment one are the tabular data of the wells in the area of review. These include the well type, construction, including casing, cementing, et cetera, date drilled, location, depth, and the record of completion.

Q. Are there plugged and abandoned wells within the area of review?

A. Yes, there are. There are seven.

Q. And does Exhibit No. 1 contain schematic drawings which show all plugging detail on each of these wells?

A. Yes, there are.

Q. What pages of this exhibit do you find those plugged and abandoned well schematics?

A. On pages 15 through 21.

Q. And you have reviewed each -- the information on each of these wells?

A. Yes, I have.

Q. And in your opinion are each of these wells plugged in such a fashion that they will not become a vehicle for the migration of injection fluids into any fresh water zone?

A. Yes, they are.

Q. Let's go to the schematic drawings on the proposed injection well. They are on pages 5 and 6 of this exhibit. And I'd ask you referring to these two schematic drawings to review for Mr. Catanach the current status of the well and then

review for him what Texaco proposes to do to convert this to injection.

A. New Mexico BO State No. 2 is currently shut in as a Devonian oil well. It's surface case, 13 and three-eighths surface casing was set at 360 feet with cement of 350 sacks to cemented circulated surface. Eight and five-eighths intermediate was set at 3,475 and cemented with 2,300 sacks cement circulated. Five and a half casing was set at 10,599, with 450 sacks, top of cement was determined by temperature survey at 8,500 feet.

In 1972 the five and a half casing was cut off at 3,395 to allow a larger submersible pump to be ran in the well. Brown casing bowl, liner hanger, and CRL packer were ran. Top of the liner is at 3,341. Currently we have a retrievable bridge plug in the hole at 10,350 feet, due to the fact that last month we tested the well, mechanical integrity of the well to ensure that this would be a good disposal well.

Q. When you obtain approval from the division is Texaco ready to immediately go out, work on the well, and convert it to injection?

A. Yes, they are.

Q. And page six of Exhibit 1 contains information on exactly how you propose to convert the well?

A. Yes. The changes in the wellbore which we will perform will squeeze the present Devonian perfs at 10,442 to

463. We'll drill out the cast iron bridge plug -- excuse me, the cement retainer that's set in the well right now, and deepen the well to approximately 10,800 feet. We'll perforate the bottom 50 feet of the casing, 10,550 to 10,599. And place the well on injection with a packer within 50 to 100 feet of the top perf.

Q. You'll be injecting into the Devonian formation?

A. That is correct.

Q. What is the source of the water that you propose to dispose of in this well?

A. From the Moore-Devonian and from the Moore Permo-Penn. The Moore Permo-Penn produces less than 100 barrels of water a day, and the Moore-Devonian produces close to 10,000 barrels of water a day.

Q. This is the same water that was being disposed of in the well north of this that recently experienced mechanical problems?

A. That's correct.

Q. What volumes are you proposing to inject?

A. Average rate of 10,000 barrels per day and a maximum rate of 14,000 barrels per day.

Q. And will the system be an open or a closed system?

A. It will be a closed system.

Q. Are you going to inject by gravity or under pressure?

A. Under pressure.
Q. And what maximum pressure do you propose to utilize?
A. The maximum that we anticipate is 1,400 psi, although .2 psi per foot would be acceptable.
Q. So pressure limitation of two-tenths pound per foot of depth at the top of the injection interval would be satisfactory for Texaco's purposes in this case?
A. That's correct.
Q. Do you know how much pressure you initially intend to use?
A. 600 pounds.
Q. Is there an analysis of the injection fluid in Exhibit No. 1?
A. Yes, there is. It's on page 27.
Q. And based on your experience with the disposal of these waters in the offsetting well to the north do you anticipate any problems, compatibility problems with the water you are proposing to inject?
A. None at all.
Q. Are there fresh water zones in the area?
A. Yes, there are.
Q. And what zone is that?
A. It's the Ogallala.
Q. And about what depth is that water zone located?
A. The base is at approximately 120 feet.

Q. Are there fresh water wells in the area?
A. Yes, there are.
Q. And are they producing water from the Ogallala?
A. Yes, they are.
Q. Are there water analyses from these wells contained in Texaco Exhibit No. 1?
A. Yes, there are.
Q. On what page are those water analyses indicated?
A. Water analyses are on page 26. On page 25 is the map with those wells, where the locations were, where the water samples were obtained at.
Q. Does this also indicate the dates when the samples were taken?
A. Yes, it does.
Q. Is there a log sample contained in Exhibit No. 1 that would show the injection interval?
A. There is a log of the well on page 23.
Q. And this shows the top of the injection interval at what depth?
A. Okay. The top of the injection interval would be at 10,550. The log shown has the current perforations marked.
Q. This is as deep as the well goes at this time and that's why the log goes only as far as it does?
A. That's correct.
Q. Have you recently tested the casing in the proposed

injection well to confirm its integrity?

A. Yes, we have.

Q. When did you do that?

A. Last month.

(Thereupon, Exhibit 2 was marked for identification.)

Q. I'd like you now to refer to what has been marked as Texaco Exhibit No. 2.

Is that an affidavit confirming the notice of today's hearing has been provided as required by the rules of the Oil Conservation Division?

A. Yes, it is.

Q. And notice was given to all affected operators as well as the surface owners?

A. That's correct.

(Thereupon, Exhibit 3 was marked for identification.)

Q. Could you identify what has been marked as Texaco Exhibit No. 3.

A. It's a copy of the certified letter receipts which I sent out of the entire package which is presented today with all the attachments.

Q. So in addition to providing notice of the hearing by separate mailing copies of this application was mailed to all affected parties?

A. That's correct.

Q. Are you aware of similar applications that have been granted for injection in this formation?

A. Yes, I am.

Q. That's the well due north?

A. That's correct.

Q. What is the name of that well?

A. New Mexico BO State No. 3.

Q. Do you know when that was approved?

A. In 1972.

Q. Do you happen to have the order number?

A. It was R-4422.

Q. Have you examined available geologic and engineering data on this area?

A. Yes, I have.

Q. As a result of that examination have you found any evidence of faults or any other hydrologic connections between the disposal zone and any underground source of drinking water?

A. No, I haven't.

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

A. Yes, it will.

Q. Does Texaco request that the order be expedited to the extent possible?

A. Yes, we do.

Q. As soon as an order is received you will be able to work on the well and return the pool to production?

A. That's correct.

Q. Were Exhibits 1 through 3 either prepared by you or compiled under your direction?

A. They were.

MR. CARR: At this time, Mr. Catanach, I will move the admission of Texaco Exhibits 1 through 3.

HEARING EXAMINER: Exhibits 1 through 3 will be admitted as evidence.

MR. CARR: That concludes my direct examination of Mr. Carter.

EXAMINATION

BY THE HEARING EXAMINER:

Q. Mr. Carter, will the old well that Texaco was using for disposal, that was the BO State No. 3?

A. Right.

Q. What's the current status of that well?

A. It's shut in.

Q. What does Texaco intend to do with it?

A. We're going to plug it. We will temporarily abandon it before we place this well on injection, before we place BO No. 2 on disposal.

Q. You will temporarily abandon it?

A. Yes. Because it will take approximately a month to two months to obtain final P and A -- or approval from Texaco.

Q. Okay. But Texaco does plan to P and A it in the future?

A. We will P and A it within the next year, yes, sir.

Q. Now, you said the Moore-Devonian field is currently shut in?

A. Yes.

Q. Or Texaco's wells in the field are currently shut in.

A. Yes. And there is only one other producing Devonian well in the field, and it is also shut in. Amerada is also -- this is a co-op disposal system, and Amerada's well is also shut in.

Q. The Devonian field produces how much water a day?

A. Approximately 10,000 barrels a day.

Q. 10,000. And there is some Permo-Penn production as well in that area?

A. Yes, there is.

Q. And how much water do you produce from the Permo-Penn?

A. Less than 100 barrels a day.

Q. Where is the Permo-Penn production in this area?

A. On page four since this map is a little bit larger it would probably be easier to identify those wells.

The well in unit letter P of Section 14 is currently producing from Wolfcamp, approximately 9,200 feet. And let's see, moving down, in unit letter P of Section 23, there is also a Wolfcamp well producing at approximately 8,400 feet, I believe.

Q. I don't show a well in unit P of 23.

A. Yes. On the map on page three there is. It just wasn't completed in the Devonian. It was drilled in the early '80's.

Q. Okay.

A. Other Permo-Penn production is primarily in Section 25 in unit letter C and D, or actually -- excuse me, just in unit letter D. And the Wolfcamp and Penn has produced in unit letter C and D of Section 25, and also in unit letter L and M of Section 24. But in L and M of 24 they are currently P and A.

Q. I see. Now the injected interval -- the injection interval is 10,550 to 10,800?

A. Yes, sir.

Q. Is this well going to be deepened?

A. Yes, it is.

Q. Within the State BO No. 3, did you have authority to dispose into the Devonian and Permo-Penn in that well?

A. No. We were only disposing into the Devonian.

Q. Why does Texaco want to open up the Permo-Penn for

disposal at this time in this well?

A. Okay. I think that was an error in the advertisement. Because we're not going to be disposing into the Permo-Penn. Only into the Devonian.

Q. So it's going to be limited to the Devonian?

A. That's correct.

Q. The wells in the area of review, are those all cemented across the Devonian?

A. Yes.

Q. Across and above the Devonian?

A. Yes, they are.

Q. Mr. Carter, approximately how much oil production are you encountering or do you have in the Devonian at this time, potential for oil production?

A. Approximately 160 barrels of oil per day in the Moore-Devonian field.

Q. And if this application is not granted you what's the alternative?

A. These wells will be shut in.

Q. You said that this well had already passed a mechanical integrity test?

A. It was not witnessed by the OCD, but it has passed an MIT.

Q. I see. You've had no objection or communication with any offset operators that you know of?

A. I've discussed it with Amerada and they did not have a problem with it.

HEARING EXAMINER: I have no further questions of the witness.

EXAMINATION

BY MR. MORROW:

Q. I want to ask you to elaborate some on how the previous injection well, what caused the failure in it and where it failed.

A. Okay. We had a casing leak between -- the top of the cement on the five and a half string was at approximately 7,900 feet. We had a leak in the five and a half casing at approximately 2,342, and eight and five-eighths five and a half anulus would communicate with the five and a half casing so we knew we had a leak. We went in, located the leak, circulated cement to the surface, and tested the rest of the casing down to approximately 8,300 feet to 500 pounds and it did hold okay. When we started cleaning the well out we created two casing leaks below 8,300 feet and we determined that it was not economical to attempt to repair the well from that point on.

Q. Did you have tubing in the well?

A. Yes, sir, we did.

Q. And it had a leak also, I assume.

A. It only recently -- it developed a leak in the week prior to when we began work on the well. But when we

identified the casing leak originally the tubing held satisfactorily.

MR. MORROW: That's all.

HEARING EXAMINER: Is there anything further in this case?

MR. CARR: Nothing further.

HEARING EXAMINER: Case 10095 will be taken under advisement.

MR. CARR: Thank you.

HEARING EXAMINER: Let's take a ten minute break.

(Thereupon, a recess was taken.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10095, heard by me on September 19 1990.

David R. Catanach, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Diane M. Winter, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL September 28, 1990.

Diane M. Winter

DIANE M. WINTER
CSR No. 414

My commission expires: December 21, 1993

OFFICIAL SEAL
DIANE M. WINTER
NOTARY PUBLIC - STATE OF NEW MEXICO
My Commission Expires 12-23-90