BEFORE THE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

June 4, 1969

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company for an exception to Order No. R-3221, as amended, Lea And Eddy Counties, New Mexico.

Case 4145

BEFORE: DANIEL S. NUTTER, Examiner

TRANSCRIPT OF HEARING

MR. HATCH: Case 4145, application of Tenneco Oil Company for an exception to Order No. R-3221, as amended, Lea and Eddy Counties, New Mexico.

MR. KELLY: Booker Kelly of White, Gilbert, Koch and Kelly, appearing on behalf of the Applicant. I have one witness.

(Thereupon, Applicant's Exhibits 1 through 4 were marked for identification.)

LOUIS WILLIAMS

called as a witness by the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

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

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

Q Have you previously qualified as an expert Petroleum Engineer before this Commission?

A Yes.

Q Referring to what has been marked as Exhibit No. 1, a plat of the area, would you briefly explain what

Tenneco seeks by this application?

A Tenneco seeks an exception to the State's No Pit Order No. R-3221 for the two leases which are outlined in orange in roughly the center of this plat; and we further seek permission to dispose of produced salt water from wells on these leases into unlined pits located on these leases.

Q How many wells are involved?

A On the little 40-acre tract located in Section 19 of 19-32, Lea County, there is one well. This is Tenneco's Miller lease. On the adjacent lease in Eddy County there, we have three wells completed in the Yates, which is the water producing formation of this area and one well in the Strawn, which does not produce water.

Q So there will be three wells which you are seeking to dispose of water in unlined pits?

A Right.

Q Will you explain what the area marked in red is?

A The area in red, below this red line near the bottom of the map, is the area excepted from this No Pit Order by the State's Order R-3221-B. Now, the area outlined in red above this horizontal red line is an area lease operated by Texaco, which has previously been granted an exception to the same Order.

Q Is there any other areas in the general area of your three wells that have been granted exceptions?

A Yes, there is another lease, it is off this map, this came to light after this map was prepared. But the thing is located two miles north of the north edge of this map. There is a red arrow there at the top of your map pointing to where that location would be. It is a Pan American lease in Section 27 of 18-31 in Eddy County.

Q That is two sections north of the top edge of this map?

A Right.

Q What are the three blue circles?

A These three blue circles represent areas of fresh water wells.

Q Now, the three blue circles, are they the same location of wells that were shown in the Texaco case that you referred to?

A Yes.

Q In this area, is there natural salt water lakes?

A Yes, in this area, particularly in the area south of the leases of interest here, there are numerous surface lakes where the water is highly saline.

Q Now, at the present time, what is Tenneco and other operators in the area doing as far as disposing of their salt water, produced water?

A Well, Tenneco's water from these leases encircled here in orange as well as all other Tenneco leases in this area, the produced water is trucked by commercial trucks down to tailing pits belonging to the Potash Mines located immediately below this red line in the excepted area.

Q As a matter of fact, does the excepted area, or so called Potash area actually extend west and north of the Tenneco property?

A Yes, it does. As you go on farther west of where this map shows, this excepted area goes back to the north. Actually, our leases in question here are south of the northernmost extremity of this no pit area.

Q As far as you are aware, is there any particular difference in the terrain or drainage, or underground water situation between the Tenneco property and the areas that have been excepted by the Commission previous to this?

A It is basically the same. The drainage, both surface and sub-surface in this general area, is generally to the south and to the southwest. This has been demonstrated in the literature a number of times.

Q Actually, this has been found by the Commission at a previous Hearing, hasn't it?

A Yes, it has.

Q Now, how much water is presently being produced by the three Tenneco wells?

A The three Tenneco wells, the lease where the three wells are located produce currently about 18 barrels a day. The other lease where the one well is located, the Miller, produces approximately 42 barrels a day.

Q So you have roughly 60 barrels a day that you are disposing of?

A That's correct.

Q Are you aware of the figures that were given by Texaco and Pan American in their applications?

A Yes. Texaco in their testimony before the Commission for this excepted area in red down here in Section 32 cited the figure of 25 barrels per day, as I remember. And the Pan American application up here, I believe the number was 207 barrels a day.

Q Now, let's refer to what has been marked as

Exhibit No. 2, your water analysis. Will you go over that for the Examiner?

A This is simply the report or the results of the laboratory water analysis done by Halliburton for us, a sample from our Miller lease, from the Ohio Jones lease, and another sample of fresh water from a fresh water well located approximately 2 3/4 miles northeast of our Miller lease. And it simply demonstrates the salinity of the produced water as opposed to fresh water in the area.

Q Now, I believe you previously testified the Potash tailing pits which both the Potash Companies and oil companies are using, is about two miles south of this red line?

A Yes, one particular tailing pit that the water from the Ohio Jones and the Miller lease is going to. Now, there are other tailing pits in this area.

Q Are you aware of the chloride content of that water? Is it substantially more than the water that you are producing?

A Yes. I can't quote you a number for chloride in parts per million, but it is several times -- of the order of ten or twenty times more salty than the produced water from the Yates formation.

Q In your opinion, based on your knowledge of the drainage conditions in this area, do you feel that putting water in unlined pits to the extent of 60 barrels a day would have any adverse effect or any contaminating effect on the fresh water wells that you have located on Exhibit No. 1?

A No, sir, I don't believe that our 60 barrels a day would have any effect on those fresh water wells.

Q Turning to what has been marked as Exhibits 3 and 4, will you explain what is shown on those exhibits to the Examiner?

A These are simply plots of water and oil production versus time for the two leases in question, and both curves have on them dash lines which are extrapolations of the general production trend of the two leases; and in both cases, there is a noticeable decline, indicating that one can expect water production to decrease with time.

Q I notice that there is a substantial increase in about the middle of 1968 on your water production. That is on Exhibit No. 3. What is the explanation for that?

A In both cases, on both the Miller and the Ohio Jones lease, let's take the Miller Lease first, when we were, as were other operators in the State, faced with a No Pit Order which was originally to be effective 1-1-69, and later extended to 3-1-69, recognizing that the Miller lease was approaching an economic limit, and if we did get into excessive salt water disposal costs, we would already be at an economic limit, we went in there and did some work on this well, installed larger pumping equipment and cleaned the well out in an attempt to increase production, and about all we succeeded in doing was increasing our water. We didn't help the oil situation at all.

And in the case of the Ohio Jones Lease, this was originally a three-well lease. We had the wells 1, 2, and 6. No. 6 declined to a non-commercial point, oh, some two-and-a-half years ago, and it was shut, pumping equipment removed, and temporarily abandoned. But there again, when we were faced with the 1-1-69 deadline, and in an attempt to make that lease more profitable in view of the pending extra salt water disposal costs, we reinstalled pumping equipment on the No. 6 Well,and put it back to pumping. Well, of course, as you might expect during this long shut-in period, liquids in the reservoir had accumulated around the wellbore, and as a result when we started pumping the well, we pumped for the first few months what you might call flush production. That is now gone, and we anticipate that the lease will rapidly go back to its original trend, decreasing production.

Q You feel that the future, as far as the amount of water produced, will decline gradually over the life of these wells?

A Yes.

Q 60 barrels will be your initial production rate?

A That is our water production, and I would expect it to decrease in the future.

Q Now, what is your present daily oil production for these wells?

A Referring to the Miller, to the Miller curve, our present production, March is the latest figure plotted on here, and that lease for March produced approximately 150 barrels of oil, which would be five barrels a day, slightly less than five barrels a day for that lease, on the average.

And on the Ohio Jones, in March that lease produced 240 barrels for the month, for an average of 80 barrels per well, or roughly 3 barrels per day per well.

Q So these wells are pretty far down the line?

A They are marginal, at best.

Q What is the cost to Tenneco, now, of hauling this water?

A We are presently paying Commercial Service 19 cents a barrel to truck this water to a tailing pit.

Q How does that come out on a monthly cost for the two leases?

A Monthly?

Q Yes, if you can calculate it?

A Oh, in the neighborhood of $350.

Q Now, assuming that you would have to continue to truck this water at that cost, what would be the effect as far as the economic limit of production on these wells?

A Well, if we are allowed to dispose of our water in pits without any excessive salt water disposal costs, we have something like two years of remaining economic life for these two leases. However, with the added salt water disposal cost, the economic limit is with us now for all practical purposes.

Q Now, I assume that this field is an old field, these are old wells, right?

A Right.

Q There probably has been a lot of water produced and dumped in unlined pits over the years, is that correct?

A That's correct.

Q How does the amount of water that you plan to put in unlined pits, what is the relationship as far as the total amount of water is that has been put in unlined pits over the years?

A In these two particular leases only now, I have estimated that there has been some 150,000 barrels of water disposed of in the past into these two pits. And I have also estimated that with the remaining economic life that we now figure on, we should have some 25,000 to 30,000 barrels of water to dispose of in the future before the leases are abandoned.

Q So, in your opinion, would the granting of this application to allow you to dispose of this salt water have any particular effect on this area, as far as increasing the contamination of any potable fresh water?

A I don't believe there will be any appreciable effect.

Q Would the granting of this application allow you to produce oil that would otherwise be left in place?

A Yes, it would.

Q Were Exhibits 1 through 4 prepared by you or under your supervision?

A Yes.

MR. KELLY: At this time, I move the introduction of Exhibits 1 through 4.

MR. NUTTER: Tenneco's Exhibits 1 through 4 will be admitted in evidence.

(Thereupon, Applicant's Exhibits 1 through 4 were admitted in evidence.)

MR. KELLY: That is all.

MR. NUTTER: Any questions of the witness?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Williams, this well over here in Section 27 on your Exhibit No. 1, apparently a water well there, what is the depth of that water?

A This water, Mr. Examiner, is, to my knowledge, is about 550 feet.

Q Was that well included in the Texaco exhibit?

A This well was referred to in their testimony.

Q I think the Texaco case gave the depth of all the water wells that they showed in the area?

A It might have, yes.

Q It was reported at that time as being about 550 feet, is that correct?

A I think so.

Q What about the well down in Section 34, do you have a depth on it?

A No, sir, I don't.

Q And the one up in the northeast in Section 8?

A I don't have a specific depth, but I believe I can safely say that all of these wells are approximately 500 feet or less in depth.

Q Or less. How much less?

A Let's say from 300 to 500 feet.

Q They are what they would refer to as being Triassic wells?

A That's correct. These fresh water sands come and go in that area. They are very erratic, as they are all over the State.

Q In this general area, there are two types of wells, the shallow wells which are producing from the alluvium on the surface, and they run anywhere from 60 to 100 or 120 feet, and then the Triassic wells that run from 300 to 500 feet.

A These wells are of the class 300 to 500 feet.

Q All of them are?

A Yes.

Q You mentioned that you were paying this trucker 19 cents a barrel to truck the water down to the tailing pond about two miles south. Do you have to pay any additional fee to put the water into the pond then?

A No, sir, the 19 cents is the trucking charge only.

Q Does the trucker have to pay a fee to put the water into the pond?

A I'm not certain what these truckers have with the Potash companies, and I would hesitate to say. There is no additional cost to us.

Q The 19 cents you pay him to take it away?

A Right. Now, I do know in other cases, in fact, it is a common practice in the State -- we pay 19 cents. Well, now, this 19 cents I am talking about, this varies with the distance the water is to be trucked. This particular figure applies to not more than a ten-mile radius to the disposal point. And then in most cases, you are faced then with an additional five cents a barrel to put it in a disposal well. But in this case, is going into these surface pits, and I am not sure what arrangement these truckers have with the Potash companies.

Q This is a contract trucker that you utilized?

A Yes.

Q I presume these wells are the shallow old Lusk, Yates, Seven Rivers, or whatever it is?

A Yes, sir the three wells that we are referring to now on the Ohio Jones, that is the 1, 2, and 6, are Yates. And the other well there in the southwest corner of this tract encircled in orange, there are two wells there close together, the one there is a Strawn well. And the Strawn historically in this area does not produce water.

Q That is what I was going to ask you, if you had any Strawn wells on your leases in this area?

A We have several Strawn wells in this area, and they all produce either none or minute quantities of water. But the three Yates wells do make the water, as does the one on the Miller lease adjacent to them.

Q Do you anticipate water production here on these marginal wells on these two leases will increase as you approach the economic limit, or will it decrease with the oil?

A No, sir, I anticipate that the water will decrease right along with the well.

Q The total fluid production will decrease, in other words?

A Right.

MR. HATCH: On your contract to haul water from your different leases, not only this one but you mentioned the others. Is that contracted to be hauled to a particular place or just off the lease?

THE WITNESS: That is just off the lease. Now, what you do, when you make an agreement with these people, they will have a disposal source or points somewhere near your property.

MR. HATCH: Does Tenneco know what that source is?

THE WITNESS: Yes. Depending on how far that point is from your lease determines the rate that you pay.

MR. NUTTER: Up to a ten-mile radius, it is 19 cents, and then it graduates up as you get farther and farther away?

Any other questions of Mr. Williams? You may be excused. Do you have anything further, Mr. Kelly?

MR. KELLY: No.

MR. NUTTER: Does anyone have anything else they wish to offer in Case 4145? We will take the Case under advisement, and call Case 4146.

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STATE OF NEW MEXICO)
) SS.
COUNTY OF BERNALILLO)

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

Samuel R. Mortelette

I do hereby certify that the foregoing is a [illegible] record of the proceedings in the [illegible] hearing of Case No. 4145, heard by me on 6/4, 1969.

[illegible], Examiner
New Mexico Oil Conservation Commission