BEFORE THE

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

April 16, 1969

REGULAR HEARING

IN THE MATTER OF:

Application of J.M.C. Ritchie for an exception to Order No. R-3221, as amended, Eddy County, New Mexico.

Case No. 4100

BEFORE: A. L. Porter, Jr., Secretary-Director
Alex J. Armijo, Land Commissioner
George Hatch, Counsel

TRANSCRIPT OF HEARING

MR. HATCH: Case 4100, application of J.M.C. Ritchie for an exception to Order No. R-3221, as amended, Eddy County, New Mexico.

MR. NEAL: If it please the Commission, I am C. Fincher Neal, Box 278, Hobbs, New Mexico. I represent Mr. J.M.C. Ritchie. I have a witness, Mr. Sikes, who I would like to have sworn.

(Witness sworn.)

J. N. SIKES

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

DIRECT EXAMINATION

BY MR. NEAL:

Q Would you state your name, sir?

A J. N. Sikes.

Q Where do you live?

A I reside in Odessa, Texas. I have an office in Midland, Texas.

Q What is your profession?

A I am a registered professional engineer.

Q Specializing in petroleum engineering?

A Yes, sir.

Q How long have you specialized and practiced in that

field, sir?

A Since I left college in 1952.

Q Did you obtain a petroleum engineering degree in college?

A Bachelor of Science Degree, Petroleum Engineering.

Q University of what?

A University of Tulsa.

Q And you have been practicing your profession since that date?

A Yes, sir.

Q Are you familiar with West Texas and Southeast New Mexico, and the oil production and oil fields of that area?

A Yes, sir.

Q Are you, in particular, familiar with the land that is the subject matter of this application?

A Yes, I am.

Q You have prepared a plat for the Commission showing the location of these wells which you would like for them to consider as Exhibit Number 1?

A Yes, sir.

Q Would you tell us the location of these wells, how many there are, and what their production is?

A These wells are located in southern Eddy County,

Township 26 South, Range 27 West, Sections 20, 21, and 16.

Q And on the exhibit that you have presented to the Commission, they are marked in red?

A Yes, sir.

Q Now, how is the present operation of these wells, as far as the disposal of water?

A There are four producing wells, and they have a common tank battery, and a pit, an open pit, and the water is presently flowing into them.

Q Would you advise the Commission approximately the location of the pit?

A The pit is in the northwest quarter of Section 21, in the vicinity just south of Well No. 2, about the center, near the center of the four wells there that are colored in red.

Q Now, were there other wells -- there are just four producing wells, is that true?

A Yes, sir.

Q Were there other wells drilled in that area by Mr. Ritchie?

A Yes, sir, there have been several wells drilled. I am not sure exactly how many. I believe a total of ten wells, I believe.

Q What is the present condition of those wells that were drilled?

A All the other holes that were drilled in this vicinity have been plugged and abandoned, casing pulled.

Q Will you state the production of these wells, average production of these wells in terms of oil, and also in terms of water.

A They produce a total of eleven barrels per day of oil, and approximately 90 barrels of water per day.

Q Would you tell about how big the disposal pit is at the present time?

A It is approximately 70 feet long, 40 feet wide, and three feet deep.

Q What is the capacity of that?

A Approximately 1,500 barrels.

Q I hand the Commission a picture. Is that a picture of the pit?

A That is a picture of one end of the pit. It shows some new work that we have done in preparing it for the Commission's approval.

Q Have you had an analysis of the water made that is in your pits, sir?

A Yes, sir, the analysis, I think you have an exhibit to

submit.

Q I hand the Commission an exhibit which may be marked at a later time. What is the chloride content of that water?

A 12,000 parts per million.

Q And review the rest of the content of the water.

A It has a very faint trace of iron; 7,500 parts per million of sodium and potassium; 200 parts per million calcium; 92 parts per million magnesium; 12,000 parts per million chloride; no hydrogen sulfide; 440 parts per million bicarbonate.

Q Now, the chloride content of that is 12,000 parts per million. How does that compare with the water from the Delaware Formation?

A Most of the water that I have, that I know about -- of course, I don't know all of the analysis, but ordinarily they run somewhere between 60,000 and 80,000 parts per million chloride.

Q This well is from what source?

A From the Delaware Formation.

Q Are you ~~prepared with~~ aware of an existing tank or water pond in the adjacent area?

A Yes, sir, there is an open pit, I suppose you would call it, that was dug about ten or twelve years ago. I'm not sure of the date. It was dug down to water, actually, and it

maintains a water level the year round.

Q Where is this pit in relation to the well --

A It is approximately 1.7 miles southeast from this pit, where we are disposing of water.

Q How long have you been disposing of water in these wells?

A About ten years.

Q Have you had an analysis made of the water content of that pit?

A Yes, sir, it is an exhibit.

Q Will you please review that for the Commission?

A Very faint trace of iron; 1,358 parts per million sodium and potassium; 192 parts per million calcium; 19 parts per million magnesium; 440 parts per million chloride; no hydrogen sulfide; 305 parts per million bicarbonate; 2,540 parts per million sulfate.

Q In your opinion, the chloride content of this, and taking into consideration that the water has been disposed in this pit for a number of years, ten years, do you think it has had any effect on the chloride content of this open pit?

A No, sir, I do not.

Q What is the depth of your wells, do you have a record of any of the wells in that area?

A Yes, sir. This exhibit is a record, the well record of one of the wells, which is typical of the other three.

Q What is the total depth of the sand and gravel area of that well?

A The surface beds, 222 feet.

Q Now, would you also for the benefit of the Commission -- have you been to the wells?

A Yes, sir.

Q Will you tell them what type of country that is, and what type of vegetation, and what this part of New Mexico looks like?

A Well, it is, I guess you would describe it as being a fairly arid area, not much vegetation.

Q Any agricultural development around this area?

A I do not see any. I do not believe so.

Q What is the closest windmill to the area that you know of?

A I couldn't get across to it to measure the actual mileage, but it looked to be about three miles in an east-southeast direction.

Q Did you have a chance to examine the water content of that well?

A No.

Q And you do not know the depth of that well?

A No. It would be above this 222 feet, I imagine.

Q Now, considering the production from these wells, and the amount of water that is being disposed of, would it be economically feasible, in your opinion, to dispose of this water in any other manner?

A No, sir, it would not be economical.

Q Approximately what would it cost to tank that, or to take that water out of the area?

A We are estimating the cost of hauling water at about 35 cents a barrel. I think probably it might run a little more, because hauling the oil out costs 55 cents a barrel.

Q Is it possible to put that water back into any of those abandoned wells?

A No, sir, they have all been plugged in such a manner that they cannot be reentered, economically reentered.

Q Because of the flow of water from these wells, would it be possible, in your opinion, or feasible to have it disposed of in a lined tank?

A No, sir, I do not. We still have to have a tremendous pit, or still have to have water hauled out.

Q In your opinion, based on your knowledge of the area

and your training, do you think that it would be economical or feasible to continue the operation of these wells unless an exception is made to the existing order of the Oil Conservation Commission?

A No, sir, I don't. The wells are marginal now, as you can see, low, low marginal, and I think that is a correct statement.

MR. NEAL: Are there any questions the Commission has?

MR. NUTTER: Any questions?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Sikes, it has been reported to me that there are two wells located in Section 27, which would be some mile or mile and a half southeast from the area under question here. There is a topographical feature south of this pool known as Owl Draw, and apparently these wells are in or near this Owl Draw.

Now, do you know anything about these wells in Section 27?

A This open hole pit that I was telling you earlier is right in the base of this draw, and El Paso Natural Gas Company dug this out, I suppose to procure fresh water in their drilling operation of a deep test there in the northwest corner

of 21, and left it there for the cattle, and the water does stand in this pit.

Q There is a windmill there?

A No, sir, it is just an open pit, and it is surface water. It just keeps it full. It is not rainwater. It is my understanding there has been as high as three years without rain, and there is still open water in this pit.

Q This is down in Owl Draw?

A Yes, it is in the base of this draw. The only windmill, Mr. Nutter, that I saw was the one at the ranch house, and I thought it was a little farther than that.

Q Mr. Sikes, I hand you what is a State Highway Quadrangle map, and it would appear that in Section 27 there would be two windmills located in that Section, and that also in Section 29 there would be a windmill which would be approximately a mile and a half to the south, southwest. Are those windmills in existence at this time?

A I didn't see them, Mr. Nutter, if they are there.

Q So, to your knowledge, you don't know whether there is any windmill there producing water of usable character?

A I sure don't.

Q Now, this analysis that you gave us, is this the analysis of the natural water that stands in the tank in Owl Draw?

A Yes, sir.

Q Again referring to the map, there would appear to be a windmill approximately four miles east.

A This would be east, and it looked like a little south on the location there. That could be it, though.

Q Do you know the source of water for that house?

A There is a windmill at the house, but I don't have any information on it.

MR. NUTTER: Thank you.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Sikes, I have some indication that there is a windmill in the southwest quarter of the southwest quarter of Section 22, Township 26 South, Range 27 East, which would be, oh, within a mile and a half of your disposal pit.

Do you have any information on that?

A No, sir, I do not.

Q I don't want to get to where I am testifying here, but I have an analysis here --

MR. PORTER: You already have.

Q I have an analysis before me on that particular windmill which shows chlorides on the order of 1,400 parts per million.

If this well is producing out of the same general section that we are talking about, this stock water tank, would this possibly be an indication that there is some contamination, but it is at a lower level than you find in this dug pit?

A I think it could be, yes. I sure couldn't deny it. It appears that this water in our pit, or this company has been using this open pit for about ten years, and it just looked to me like it would come right on down that draw from a topographic standpoint, to the south or southeast, but it is possible that it would go to the east. But I didn't have any information on that well.

Q In your picture of the pit, the pit is dry.

A Yes, sir.

Q Is there a hole right there below the drain line where this water disappeared?

A Not right below it. It is out about ten feet or so. It is taking water real good.

MR. STAMETS: I believe that is all the questions I have.

MR. PORTER: Does anyone else have a question?

Mr. Stamets, I believe, has visited the area. Mr. Stamets, do you have any information on the specific

location of these wells, and the depths of the water, and so forth?

MR. STAMETS: I have been into the area, and as I drove in, I observed both right and left, and the only windmill I saw was this one I spoke of as being in the southwest quarter of the southwest quarter of Section 22. I do not have any information at this time as to the depth of this well. I also felt that the company representative would likely have very detailed information, and there was no need to duplicate this. However, I did take a water sample, and it has been analyzed.

MR. PORTER: Mr. Stamets, we are going to ask you to take the stand.

R. L. STAMETS

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

DIRECT EXAMINATION

BY MR. NUTTER:

Q Mr. Stamets, would you just proceed to tell us what you know about the area, what your examination of the premises revealed?

A Yes, sir. After the application was filed, I made a trip into this area. As I say, I just drove down the road which

roughly parallels this Owl Draw which has been spoken of previously. Owl Draw drains generally from the west to the east into the Pecos River. It is very desolate country, very dry country.

As I said before, I looked on both sides of the road as I went in, and I saw no windmills. It doesn't mean that there aren't some someplace on the other side of the hill, but generally in the distance as you could see there are no windmills. I drove into the pool and went by the tank battery, and very hurriedly took a water sample. I went out to where the water was draining into the pit, and at the end there was a large hole about three feet in diameter, and by throwing a rock in, I would estimate it to be about twelve feet deep. I was a little leery about walking out there and putting my bottle in, but I finally managed to get a sample.

Then I went around and generally surveyed the wells, and on the way out I could see what I thought was a fine ranch house down the pike a little bit, so I made a left hand turn and started to the east, and came upon this old abandoned ranch house. Apparently, it has been occupied in recent years, but the general appearance indicates that the last two or three years it is likely that it has not been occupied. I did find a windmill there, which was supplying water for stock in the area,

and I took a sample of this water.

Then I made my way on back, and the Commission's office here in Hobbs has analyzed both the water samples.

Q Would you care to put that into the record?

A Yes, sir. We have extra copies of these available, I am sure.

Q This is an analysis of the water found where?

A The first one is the produced water from the Welch Delaware Pool. It has total dissolved solids of 22,320 parts per million; chlorides, 9,050 parts per million; sulfates, 36 parts per million.

The second sample was taken at the water well in Unit M, Section 22, Township 26 South, Range 27 East. Total dissolved solids, 5,670 parts per million; chlorides, 1,420 parts per million; and sulfates, 2,240 parts per million.

If you will notice the high sulfate content here correlates with the water sample presented by Mr. Sikes from the dug pit. However, you will also notice that the chlorides are considerably higher than the chlorides reported on the previous sample. Now, this could be for a number of reasons, but there is an indication here that at least at some lower depth than this pit, there is a higher concentration of chlorides.

MR. NEAL: I don't understand that. Which pit, the

bottom of the --

A The dug pit in the bottom of Owl Draw. I did see this pit, and I assumed it was just a stock tank that had been dug there, and didn't stop to take a water sample. This is very good information that you have on that.

MR. NEAL: You were there, I presume, prior to the time of the building of the new pit, disposal pit? Have you seen the exhibit of the Commission, the picture, the big hole we talked about? It has since been repaired, I believe.

A I couldn't see the big hole until I got right up there. I do see some evidence of work being done. This type thing is not unusual in this area. I have seen it at other pits, and I would assume -- this is theoretical, of course -- I would assume that after a period of time that the hole would reappear. That would be my analysis of the situation.

MR. NEAL: That is all.

MR. PORTER: Does anyone have any further questions of Mr. Stamets?

Incidentally, let the record show that Mr. Stamets is the geologist with the Oil Conservation Commission in the District of Artesia, and the Commission does consider him qualified. You are free to ask him any questions that you would like to.

Mr. Stamets, what was the nearest fresh water that you found to the well, or usable water to the disposal pit? Do you know whether it was usable or not?

MR. STAMETS: Do you mean for human consumption or stock water?

MR. PORTER: Well, either one.

MR. STAMETS: Well, I would say that the dug pit that Mr. Sikes talks about is on the order of three-quarters of a mile immediately south, and somewhat lower than the disposal pit.

MR. NUTTER: Did you measure that distance, Mr. Sikes?

MR. SIKES: Yes, it is 1.7 miles. It didn't look like it was that far, but it was.

MR. PORTER: Is that in the direction of drainage, surface drainage from the pit area?

MR. SIKES: It appeared to be, yes. It is in the base of the draw. It all runs a little to the east of that, to the south and east.

MR. PORTER: Does anyone else have a question?

MR. NEAL: We would like to offer our exhibits into evidence.

MR. NUTTER: Mr. Neal, could you designate those by number?

MR. NEAL: Yes, I would designate the plat as Number 1; and the first, the 12,000 chloride content of the pit water, that would be Number 2; and the analysis of the open tank would be Number 3; the well record would be Number 4; and we can make the photograph Number 5.

MR. PORTER: If there is no objection, the exhibits will be admitted.

(Whereupon, Applicant's Exhibits Numbers 1 through 5, inclusive, were marked for identification, and received in evidence.)

MR. NEAL: If you would like further sampling of that windmill, we will attempt to do that.

MR. NUTTER: I believe it would be helpful if we could get that.

MR. NEAL: All right, sir.

MR. PORTER: If there is nothing further, we will take the case under advisement. At this time, we will recess for lunch.

I N D E X

EXHIBITS	MARKED	OFFERED AND ADMITTED
Applicant's Exhibits Numbers 1 through 5, inclusive	19	19

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 Mortelette

COURT REPORTER