

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 17, 1963

REGULAR HEARING

IN THE MATTER OF:)

The hearing called by the Oil Conservation)
Commission on its own motion to permit all)
operators in the South Lane-Pennsylvanian,) Case 2863
Middle Lane-Pennsylvanian, Inbe-Pennsylvan-)
ian, and the Inbe Wolfcamp Pools, Lea)
County, New Mexico, to appear and show)
cause why the disposal of produced salt)
water from said pools or within one mile)
thereof in unlined pits should not be pro-)
hibited.)

BEFORE: Honorable Jack M. Campbell
Mr. A. L. "Pete" Porter
Mr. E. S. "Johnny" Walker

TRANSCRIPT OF HEARING

MR. PORTER: Case 2863.

MR. DURRETT: In the matter of the hearing called by
the Oil Conservation Commission on its own motion to permit all
operators in the South Lane-Pennsylvanian, Middle Lane-Pennsyl-
vanian, Inbe-Pennsylvanian, and the Inbe Wolfcamp Pools, Lea
County, New Mexico, to appear and show cause why the disposal of
produced salt water from said pools or within one mile thereof
in unlined pits should not be prohibited.

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If the Commission please, J. M. Durrett, Junior, appearing on behalf of the Commission and its staff.

MR. PORTER: I would like to ask for other appearances in this case at this time.

MR. KELLAHIN: Jason Kellahin, Kellahin & Fox, Santa Fe, representing Rice Engineering and Operating, Incorporated. We will have one witness to offer some testimony in this case.

MR. PORTER: Rice Engineering and what?

MR. KELLAHIN: And Operating, Incorporated.

MR. PORTER: You will have one witness?

MR. KELLAHIN: Yes, sir.

MR. KELLY: Booker Kelly, Gilbert, White and Gilbert, Santa Fe, appearing on behalf of Texaco. I probably will make a statement.

MR. DONALDSON: David H. Donaldson, L. R. French, Junior.

MR. PORTER: Do you have any testimony to present, Mr. Donaldson?

MR. DONALDSON: The only thing I have to say, we are just trying to make arrangements to put it into the ground.

MR. WHORTON: Donald Whorton, Tenneco Oil Company. I probably will have a statement to make.

MR. PORTER: Mr. Irby.

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MR. IRBY: Mr. Irby, State Engineer's Office.

MR. BRANCH: W. H. Branch, Sun Oil Company. I would like to make a statement.

MR. PORTER: As I understand it, nobody desires to put on testimony at this time with the exception of Rice Engineering and the Commission, the Commission staff. Mr. Durrett.

MR. DURRETT: If the Commission please, I propose at this time to put on Mr. Joe Ramey, Supervisor of District No. 1 for the Oil Conservation Commission in Hobbs, New Mexico, to give a brief background and summary of the problem that is before the Commission today and how this problem has arisen. At that time I would propose to excuse him from the stand and reserve the right to recall him at a later time if necessary.

I also would like to state at this time that Dr. Zane Spiegel is here from the State Engineer's Office, and he is prepared to present testimony to the Commission concerning the possibility of contamination in this area and his opinion concerning the same. However, it may not be necessary to call Dr. Spiegel, and I would like to determine that at a later date. At any rate, at this time I would like to call Mr. Ramey.

MR. PORTER: You mean at a later time rather than a later date?

MR. DURRETT: Yes, sir, later on this date.

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MR. PORTER: Mr. Ramey, have you been sworn?

MR. DURRETT: I'll swear him in for the purpose of this case.

(Witness sworn.)

JOE D. RAMEY

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. DURRETT:

Q Will you please state your full name and position for the record?

A Joe D. Ramey, Supervisor, District 1, New Mexico Oil Conservation Commission.

Q Mr. Ramey, in your capacity as Supervisor of District No. 1 for the New Mexico Oil Conservation Commission, is it part of your duties to make recommendations to the Commission concerning the disposal of produced salt water in your area?

A Yes, sir, it is.

Q Would you please give us some background of this situation that has arisen today before the Commission? Very briefly tell us how it has arisen and what steps you have taken concerning this matter.

A Yes, sir. The Hobbs Office received a complaint, I



believe that was in early January, from a rancher in the area of the South Lane, Middle Lane and Inbe Pools.

MR. PORTER: January of this year?

A Yes, sir. Concerning disposal of produced brine in open pits in this area. He was afraid of contamination. We made an inspection trip of the area and it was certain in our opinion that there was a danger. So with this we called a meeting of all the operators, present operators and drilling operators at that time, which was held in Hobbs on March the 29th.

At this meeting the operators gave me a preliminary design which they had asked Rice Engineering to prepare for a disposal system and stated that one operator had already signed the agreement and that the agreement was in the hands of the remainder of the operators. We thought this was very good progress, and so we dropped the matter for approximately a month, at which time I checked with Rice and they informed me that there was still only one operator who had signed the agreement. So on April 25, why I wrote a letter to all the operators in the area and suggested that actual physical construction of a disposal system be commenced by July 1st, and if it was not commenced that I would recommend that this hearing be held on this date.

Q That is the progress up to this date, is that correct, Mr. Ramey?

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A Yes, sir.

Q Mr. Ramey, are you familiar with Case 1053 that came on before the Oil Conservation Commission originally in May of 1956?

A Yes, sir.

Q And this case was consequently continued from time to time?

A Yes, sir.

Q You are familiar with that case?

A Yes, sir.

Q Were you present during that case and did you hear the testimony given at that time?

A Yes, I did.

Q Are you familiar with Orders No. R-1224 and R-1224-(a) which were issued as a result of that hearing and those cases?

A Yes, sir.

Q Mr. Ramey, do you agree with the testimony that was presented in that case concerning the possibility of contamination in this area by producing salt water in unlined pits?

A Yes, sir.

Q Do you feel that the situation has changed any to this date?

A No. I can't see where there has been any change.

Q In your opinion the testimony as given in Case 1053



would still apply today to this area?

A Yes, sir.

MR. DURRETT: If the Commission please, that will conclude my examination of Mr. Ramey at this time, and I would like to move to incorporate the record in Case 1053 with the record of this hearing. I would also like to request at this time that the Commission take administrative notice of Orders No. R-1224 and R-1224-(a) that were issued in Case 1053 as a result of the hearing or hearings in that case.

MR. PORTER: Are there any objections to the counsel's motion? The Commission will incorporate in the record Case 1053 into this record and take administrative notice of Order R-1224 and Order R-1224-(a).

MR. DONALDSON: What is Case 1053?

MR. PORTER: Would you identify yourself, please?

MR. DONALDSON: David R. Donaldson.

MR. DURRETT: I will try to give you a run-down on what the case consists of without going into detail on it. The testimony in this case is stacked in a great stack about three feet deep. That case, the style of the case was the application of the Oil Conservation Commission upon its own motion at the request of the State Engineer for an order prescribing rules and regulations to govern the disposal of salt water in areas of Lea



County, New Mexico.

That case came on before the Commission May of 1956 and was continued subsequently from time to time and heard in June of 1958, and then finally in September of 1958. These orders that we have requested the Commission to take administrative notice of were issued as a result of those hearings concerning the possibility of contamination from producing salt water in unlined pits.

Maybe I can read you one or two substantive paragraphs out of the order so it will be perfectly clear to you. As far as your or --

MR. DONALDSON: That's all right. In other words, in any pit they have a right to conduct the proceedings to put the water into the ground?

MR. DURRETT: It's actually a little stronger than that. It reads that all operators in the following named areas, which is the Lea County area, shall produce with due diligence to complete efficient disposal system for all salt water produced in the area.

Then, as far as your R-1224-(a), which was the final order in this case, it states as far as its substantive finding, that the surface disposal of oil field brines in unlined pits in the following described areas constitutes a hazard to the fresh waters in the Lea County underground water basin as the same is

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defined by the State Engineer of the State of New Mexico, and that such method of disposal should be prohibited in said areas.

It sets the areas out, which are the Lea County areas. That, briefly, is the format and style of this case and what it contains.

Q (By Mr. Durrett) Mr. Ramey, I have one additional question I would like to ask you at this time. This hearing was called concerning the South Lane-Pennsylvanian, Middle Lane-Pennsylvanian, Inbe-Pennsylvanian and the Inbe Wolfcamp Pools in Lea County, New Mexico. Are these pools, do you know of your own personal knowledge if these pools that are the subject matter of this hearing are within the Lea County underground water basin as described by the State Engineer's Office?

A No, they are not.

Q They are not?

A No, sir.

Q Mr. Ramey, are these pools within the area that was dealt with by Case 1053, do you know that of your own personal knowledge?

A I don't remember exactly whether 1053 said for the Lea County fresh water basin or not.

MR. PORTER: Well, Mr. Ramey --

A There were pools designated in R-1224-(a), is that the



order number?

Q That's the last order.

A That were certainly outside the fresh water basin.

MR. PORTER: The Order R-1224-(a) refers to certain areas including the East Caprock, Bagley, Saunders, Crossroads, the Bough and the Denton Pools. Aren't those pools in the general area of the pools in question here today?

A Yes. These pools will be north of the Bagley and will be north and east of the East Caprock. They're in the general area. These pools are northern Lea County.

GOVERNOR CAMPBELL: Mr. Ramey, in your opinion do we have the same dangers with regard to the pollution of fresh water supplies referred to in this hearing that existed with regard to the pools described in Order 1224-(a)?

A Yes, sir. I can see nothing between the surface of the ground and the fresh water sands that prevent the filtration of these produced brines into the water aquifer.

MR. PORTER: Does anyone else have a question of Mr. Ramey?

CROSS EXAMINATION

BY MR. WALKER:

Q Mr. Ramey, you said you had a protest on this in January. Could you identify the protestor?



A Yes, sir, it was a Mr. Carl Lane Johnson.

Q Is that on state land or fee land or federal land?

A It's both, fee and state.

MR. WALKER: That's all.

BY MR. PORTER:

Q Mr. Ramey, did Mr. Johnson purport to represent a number of other ranchers at the time that he made the complaint?

A No, he was interested in his own problem. He might have been speaking for another rancher up there.

Q But he didn't say so?

A He didn't say so, no, sir.

REDIRECT EXAMINATION

BY MR. DURRETT:

Q One final question. Is it definitely your opinion that disposal of salt water in unlined pits in the areas that are advertised and on this docket today, these pools will constitute a hazard to fresh water supplies?

A Yes, sir.

MR. DURRETT: If the Commission please, that will conclude my examination of Mr. Ramey at this time. I would like to reserve the right to recall him later on today if necessary.

MR. PORTER: If necessary, you may recall the witness at some later time this morning. Does anyone have a question of



Mr. Ramey?

MR. DURRETT: If the Commission please, I have been advised prior to the hearing by Mr. William C. Abbott of Rice Engineering and Operating, Incorporated that they would like to present testimony. I would like, since this is a show cause hearing, to allow them to do so at this time, with the Commission's permission.

MR. PORTER: Mr. Kellahin, are you representing Rice Engineering?

MR. KELLAHIN: Yes, sir.

MR. PORTER: You may proceed with your testimony at this time.

(Whereupon, Rice's Exhibits 1, 2 & 3 were marked for identification.)

MR. KELLAHIN: I would like to have Mr. Abbott sworn, please.

(Witness sworn.)

W. G. ABBOTT

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?



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A Yes. My name is W. G. Abbott.

Q By whom are you employed and what position, Mr. Abbott?

A I am Division Manager of Rice Engineering and Operating, Incorporated in Hobbs, New Mexico.

Q What business is Rice Engineering and Operating, Incorporated engaged in?

A We are consulting engineers and specialize in the design, supervision of construction and operating the salt water disposal systems.

Q Has the company designed and installed and is presently operating a number of salt water disposal systems in Southeast New Mexico?

A Yes.

Q Have you ever testified before the Oil Conservation Commission and made your qualifications as an engineer a matter of record?

A Yes, sir.

MR. PORTER: The Commission considers the witness qualified.

Q (By Mr. Kellahin) Mr. Abbott, have you made any study of the areas involved in Case No. 2863?

A Yes, sir. Various operators hired us to write a preliminary report on salt water disposal, and after the report was



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written we submitted an operating agreement to these operators.

Q Was the proposed design of a salt water disposal system submitted with that study?

A Yes, sir.

Q Referring to what has been marked as Rice Engineering's Exhibit No. 1, will you identify that exhibit and discuss the information shown on it?

A Yes, sir, this Exhibit No. 1 shows the lands involved in this system with our design of the lines, showing the proposed disposal well down in the Southwest Quarter of Section 16, Township 11 South, Range 34 East.

Q Is that a presently existing well?

A Yes, sir. That was a dry hole drilled originally by Skelly Oil Company. It's dry and abandoned.

Q It has been plugged, has it not?

A Yes, sir.

Q On whose land is it located?

A It's on Bogel Farms, Incorporated land.

Q Have you made any arrangement towards securing the use of this well?

A Yes. We have gotten a surface lease from Bogel Farms, Incorporated around this well. We have also written Shell Oil Company for permission to use that well since they have the



minerals leased on that land.

Q What formation would the disposal be made into, assuming you secure the use of this well and permission of the Commission to utilize it for salt water disposal?

A This will be in the San Andres formation.

Q In your opinion will the San Andres formation take the volumes of water involved in the area here?

A We believe that it will.

Q What volume of water do you contemplate would be disposed of by this system?

A Estimated volume would be 4,000 to 5,000 barrels a day.

Q Referring to what has been marked as Exhibit No. 2, would you identify that exhibit and discuss the information on that?

A Exhibit No. 2 is the cost estimate that we have furnished for information at this time, showing the estimated cost of this proposed salt water system.

Q Now, referring to what has been marked as Exhibit No. 3, would you identify that exhibit?

A Yes. Exhibit 3 shows the various parties that make up this South Lane salt water disposal system. I would like to read these into the record. Apache Corporation, Sam Boren - Major and Giebel, Tom Brown Drilling Company, Cabot Corporation, T. F.

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Hodge, Humble Oil and Refining Company, Midwest Oil Corporation, Tenneco Oil Company and Texaco, Incorporated.

Q Have all the companies agreed to the installation of this system?

A Yes, all the companies listed on this exhibit have signed the agreement.

Q Have you encountered any delays in connection with the installation of this unit?

A Yes, we have one delay. I don't know how we'll resolve it. We submitted an operating agreement to the parties, and on that agreement one operator, L. R. French, Junior, was included. L. R. French, Junior didn't sign the agreement, which the agreement is written such that all parties have to sign it before it becomes in force, so it will be necessary for us to circulate an amendment to this agreement before the agreement becomes effective, and there is some delay.

Q How long do you anticipate that will take?

A Well, I'd say two to three weeks.

MR. PORTER: You mean to recirculate the amended agreement?

A Yes, sir.

MR. PORTER: Thank you.

Q (By Mr. Kellahin) Has there been any delay in

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connection with securing the use of the disposal well?

A Yes. We have run into a little delay there. L. R. French contacted Shell to get a lease on this dry hole for their own use. I believe Shell has given that permission to L. R. French. We have a surface lease from the land owner around the well from Bogel Farms, Incorporated, so it's a matter of getting together to see if Rice Engineering has the lease on that well or if L. R. French has the lease.

Q Assuming you will be able to use that particular well, how long would it take, in your opinion, to get this installation installed and operated?

A We estimate approximately sixty days.

Q In the event you can not use that well, what alternative do you have?

A Well, the alternative would be to drill a disposal well for use of the system.

Q Is there any other well in the area available for that purpose?

A Not that we know of, that has a well-developed disposal zone as this well has.

Q Were Exhibits 1, 2 and 3 prepared by you?

A Yes, sir.

MR. KELLAHIN: I would like to offer in evidence



Exhibits 1, 2 and 3.

MR. PORTER: Are there any questions concerning the exhibits? Any objections to the admission? The exhibits will be admitted into the record.

(Whereupon, Rices's Exhibits 1, 2 and 3 were offered and admitted in evidence.)

Q (By Mr. Kellahin) Is there anything further you wish to state in connection with the case, Mr. Abbott?

A No, sir, not that I know of.

MR. KELLAHIN: That completes the direct examination of the witness.

CROSS EXAMINATION

BY MR. PORTER:

Q Mr. Abbott, in regard to this proposed disposal well, the way I understand it right now, I understand that you have the surface rights to lay a line to this well, to the disposal well?

A Yes, we have leased two acres around the well.

Q The right-of-way?

A And have the permission from the fee land owner to use that well for injection.

Q Then, if it develops that Mr. French has the well, the right of the disposal into this particular formation, that the situation would be this, that you have the surface rights, the

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access to the well, but you can't put any water into the well.

If he has the well and he can't get to it to put the water in --

MR. KELLAHIN: I think this is a legal question, if the Commission please, and I am sure the witness can't answer it.

MR. PORTER: I was just making certain assumptions.

MR. KELLAHIN: I'm not sure I can. The situation is this, that the lease from the surface owner includes the right to dispose of water under the surface. On the assumption that he has that right, he would be the one to get the lease from. You still have the question who owns the well, whether Shell owns it or the surface owns it or it might even be state mineral rights involved in there too.

GOVERNOR CAMPBELL: When was the well abandoned?

A In 1956. It was drilled by Skelly.

MR. KELLAHIN: The lease is still out and Shell owns the lease on it. We have a rather difficult question here as to who really does own that well at the moment.

Q (By Mr. Porter) As I understand it, Mr. Abbott, this well was a deep well, probably Pennsylvanian or Devonian test?

A Yes, sir.

Q But you would dispose of the water in the San Andres formation?

A Yes.



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MR. PORTER: Does anyone have any questions of Mr.

Abbott?

BY GOVERNOR CAMPBELL:

Q Does French own the operating rights in this area?

A He's not shown on the list. No, sir, he decided to dispose of his own salt water and didn't go in this South Lane salt water disposal system.

Q These listed on Exhibit 3 are just those that are in the system?

A That's right.

Q Is it everyone except French?

A There may be other operators that aren't in the system. I don't think Southern Natural is in the system. I don't know what other operators.

Q Do you know what arrangements they're making or have made for disposal?

A No, sir.

MR. DONALDSON: Southern Natural has agreed to go with us to dispose of water in this Skelly well.

Q (By Governor Campbell) This looks like an irresistible force and an immovable object and the public is the one that's been delayed. Do you have any reason to expect agreement, or have you yet undertaken to work something out?



A No, this thing just came out recently and we haven't had time to work out any agreement between L. R. French and Rice Engineering. We hope we can resolve it. It's impractical for two operators to operate the same disposal well. We would like to operate it, and it's up to the member companies of the disposal system if they want to bring L. R. French into the system. I am sure they would vote them in, I don't see why they wouldn't.

BY MR. PORTER:

Q Mr. Abbott, did you give an estimated time of how long it might take to start putting water into the ground here in the event that you have to drill a disposal well? If not, would you?

A I believe it still would be around sixty days.

Q You think it would take you around sixty days from the present date to start putting water into the ground in the event that you have to drill a disposal well?

A Yes, sir. It would just take seven days to drill a well, or less.

Q About the same time as it would if you were to obtain the Skelly well?

A That's right. We don't especially want to drill a well in that, although it would cost about the same as running this line down to the presently drilled well, the San Andres isn't developed as well up in the field proper. I don't know, it's a



matter of structure.

MR. PORTER: Mr. Durrett, I believe you had some questions.

MR. DURRETT: I believe you have asked most of mine, but I have one more.

BY MR. DURRETT:

Q Mr. Abbott, am I correct that you are of the opinion that produced salt water in this area should be disposed of underground rather than in unlined pits, in order to protect against the possibility of contamination of fresh water supplies?

A I don't want to answer the question since we've been hired by the operators to design and operate a disposal system. Evidently they think it is necessary.

MR. DURRETT: That will be sufficient for me, thank you.

MR. PORTER: Anyone else have a question of Mr. Abbott? Mr. Kelly.

BY MR. KELLY:

Q You stated that you are recirculating your contract. Is that recirculating it to leave out French?

A That's right, and also I think we added Sam Boren to that agreement.

Q Now, this you estimate would take about three weeks?

A Yes.



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Q Would you wait until this contract was recirculated and signed before you attempted to drill another well?

A Not necessarily, no, since everyone has signed the original agreement, we could probably start before that time.

Q You wouldn't tack on the three weeks to the sixty days you estimate?

A Yes.

Q You would or you would not?

A Well, I think we could leave it off. We could put in the system in sixty days.

Q Then the drilling of a well would not change your cost to such an extent that you would have to renegotiate the contract?

A We don't think so, no. That would have to be discussed at a committee meeting.

Q Could you tell me if you have the information, the present status as far as French is concerned? Are they operating wells in the area?

A Yes, sir, they have some wells in the area.

Q They're being produced now?

A Yes.

Q Do you know what they are doing with the salt water?

A No, I don't know.

Q Do you know of your own knowledge whether it is being



disposed of underground?

A No, sir, I don't know. I don't think it is at the present time.

MR. KELLY: If the Commission please, there's a representative of French here. I would like to call him as a witness to find out what they are doing with their salt water at the present time.

MR. PORTER: Mr. Ramey, you might answer this question. Is any water being disposed of underground in this area at the present time in the pools mentioned in the application?

MR. RAMEY: No, sir.

MR. PORTER: No water at all?

MR. RAMEY: No. Now L. R. French has made application to dispose of produced water in non-porous media non-productive of oil on the Commission form that was received in the Hobbs Office last Saturday.

MR. PORTER: That was on the approved form?

MR. RAMEY: Yes. As far as I know they have, they haven't filed any forms to re-enter the well. They have discussed the matter with me.

GOVERNOR CAMPBELL: Does that answer your question, Mr. Kelly?

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MR. KELLY: Yes, sir. That's all.

MR. PORTER: Does anyone else have a question of Mr. Abbott? Mr. Ramey?

MR. RAMEY: Yes.

BY MR. RAMEY:

Q When was this report prepared by Rice?

A This report was dated March 8, 1963.

Q When did all the member operators sign?

A I think the last operator signed approximately a week ago.

Q The majority of operators did sign after the first of July?

A No, I think most of them signed before the first of July. Some of the delay, I believe, Joe, in signing the agreement wasn't so much the agreement, it was a matter if they had a well or didn't have a well, some of the wells were marginal.

MR. RAMEY: Yes. That's all.

MR. PORTER: Does anyone else have a question? Mr. Abbott may be excused.

(Witness excused.)

MR. PORTER: Does anyone else desire to present testimony?

MR. DURRETT: If the Commission please, I would desire



to recall Mr. Ramey for just one or two short questions.

MR. PORTER: Mr. Ramey, will you take the stand, please?

JOE D. RAMEY

recalled as a witness, having been previously duly sworn, testified further as follows:

REDIRECT EXAMINATION

BY MR. DURRETT:

Q Mr. Ramey, when you were originally on the stand a few minutes prior in this hearing I asked you a question concerning the Lea County underground water basin and whether or not the area that is the subject matter of this application was within that water basin. I believe you answered the question that to your knowledge it was not. Now, since you have left the stand have you had an opportunity to consult your maps and your official notes and documents that you carry with you as part of the official Oil Commission files, and also have you had an opportunity to discuss with the State Engineer's Office this question as to whether or not this area is within this underground water basin?

A Yes, I have.

Q As a result of your various consultations with your notes and the State Engineer's Office, have you been caused to change your mind somewhat concerning the answer to that question?

A Yes. The Inbe-Pennsylvanian Pools and the Inbe Wolfcamp



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Pools are in the fresh water basin. The border is along this extent. The Inbe Pool reaches in this area so the South Lane and the Middle Lane will be out of the basin, but bordering directly on the north.

MR. PORTER: What did this Inbe mean, Mr. Ramey?

A I think that was set up because it was kind of in between a bunch of other pools.

Q (By Mr. Durrett) Am I correct, then, Mr. Ramey, that at least a portion of this area is within the underground water basin, approximately half of it?

A Yes, sir.

Q And the rest is adjacent to that area?

A Yes, sir.

Q Would you have a recommendation to make to the Commission concerning its action that it should take in view of the testimony that you've heard here today in this hearing?

A Yes, sir, I would like to recommend, well, I was first going to recommend approximately forty-five days, but I will go along with the sixty days as stated by Mr. Abbott, but I would recommend that if water is still going into unlined pits at the end of sixty days, that those wells be shut-in until such time as they can dispose of their water by some other means.

MR. DURRETT: Thank you, Mr. Ramey. That concludes my



examination of Mr. Ramey. Anyone have any questions of Mr. Ramey?

MR. PORTER: Mr. Donaldson.

RECROSS EXAMINATION

BY MR. DONALDSON:

Q Mr. Ramey, with an application for a well could there be some way, that is, we have an application to drill a well in the vicinity of Lea County, could you so state on the form that we turn in that you prove back that this well is in this water basin, where you could put that in your initial cost when you drill a well?

A I think we could. However, the water basin is a matter of public record, and I think the operator should know. I have a map in my office which outlines the Lea County water basin.

Q It depends on if a well is close to economics whether you are drilling or whether you do know about putting the water in the ground, because that increases the cost. The first estimate to put the water in the ground was around \$9200 a well; well, we have three wells, that is \$27,000 that knocks out on a 10,000 foot hole, it brings the cost up there around \$180,000 a well. Even that amount of profit, that amount of extra cost could make the difference whether you drill or don't drill?

A Yes, sir, I agree.



Q If they could know that ahead of time. Of course, if you have the map of that, it would be a good idea if they could send a plat of that fresh water, because I imagine we'll be doing a lot of drilling in New Mexico where you can estimate or put the cost in when you go to drilling to figure out the economics.

A I might suggest, Mr. Donaldson, that you write the State Engineer's Office. I think they have plats outlining the Lea County water basin and every other basin in the state.

MR. DONALDSON: Thank you.

MR. PORTER: Anyone else have a question? Mr. Kelly?

MR. KELLY: I don't have any questions of Mr. Ramey.

MR. PORTER: Let's dispose of Mr. Ramey here. I didn't mean that literally. Does anyone else have a question of Mr. Ramey? He may be excused.

(Witness excused.)

MR. PORTER: Mr. Kelly.

MR. KELLY: I would like to renew my request to ask Mr. Donaldson to take the stand.

MR. PORTER: Mr. Donaldson, would you like to take the stand, please?

(Witness sworn.)



DAVID H. DONALDSON

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name and employer, please?

A David H. Donaldson, Production Superintendent for L. R. French, Junior.

Q You are familiar with the area that we are concerned with today?

A Yes, sir.

Q As far as the wells that French has down there?

A Yes, sir.

Q How many wells are being operated in this area by French?

A There's three by French.

Q Are they presently in production?

A Yes, sir.

Q Can you state what is being done with the salt water?

A Putting it in open pits.

Q Unlined pits?

A Yes, sir.

Q What negotiations has your company entered into, if any,



to dispose of this water other than in unlined pits?

A Well, when we got, we originally, we got the initial agreement from Rice Engineering and gave them a preliminary fee to check out the cost of the disposal of the water. We thought it was too high and made arrangements with Shell, obtaining a well from Shell and easement across the Bogel Farms to put the water in the Skelly well, and Southern Natural, which is a southern offset to us, agreed to go along on the deal of putting the water in the ground.

Q You are not planning on injecting into the same well that Rice Engineering is going to use?

A We had planned.

Q Now, you are talking about the Skelly well?

A Well, it's this Skelly well down here in Section 16.

Q That's the same well?

A Yes, that was the Shell lease.

MR. PORTER: I was confused because they were referring to the Shell well. So your company is planning on developing its own salt water disposal system?

A Yes, sir, was planning on it. May have to change it. I don't know for sure yet. We did that because we thought we could do it cheaper.

MR. KELLY: I think that's all.



CROSS EXAMINATION

BY MR. WALKER:

Q Mr. Donaldson?

A Yes, sir.

Q When did you start negotiating for that well, after Rice Engineering had made their deal with you, or before?

A We never signed any agreement.

Q I didn't ask if you signed anything, I asked when you started negotiating for this well.

A Yes, sir, it was after the preliminary report with Rice Engineering.

MR. WALKER: That's all.

MR. PORTER: Does anyone else have a question of Mr. Donaldson?

MR. WHORTON: Don Whorton, Tenneco Oil Company.

BY MR. WHORTON:

Q I would like to ask Mr. Donaldson if you have actually started any type of construction to install your salt water disposal system?

A What we had done, we had took a cat and went to the old well and dug a hole in the ground to find the abandonment of the pipe and it's cleaned out. Application was sent in to the Oil Conservation Commission at Hobbs day before yesterday for

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re-entering that well.

Q You haven't received approval from that application?

A No, sir.

MR. WHORTON: Thank you.

MR. PORTER: Any further questions?

BY GOVERNOR CAMPBELL:

Q Did you say you also had a right-of-way easement to lay pipe in addition to whatever you have from Shell?

A Yes, sir.

Q You have that from Shell?

A No, we have that from Gobel Farms, Incorporated into the well as of June the 26th.

BY MR. WALKER:

Q Do you know whether this is all fee land from Bogel or state land, or both?

A They way they tell me, sir, of course, when Skelly drilled a dry hole they turned it back to the state, state minerals, and Shell leased the land and took a lease on it. I believe it's fee land, in other words, state minerals and then the surface owner is Bogel Farm, Incorporated, which the easement came from Bogel Farms.

MR. PORTER: Any further questions? The witness may be excused.



(Witness excused.)

MR. PORTER: Mr. Durrett.

MR. DURRETT: If the Commission please, I would like at this time to call Dr. Zane Spiegel with the State Engineer's Office, as a witness on behalf of the Oil Conservation Commission.

MR. PORTER: Will you swear the witness, please, Mr. Durrett?

MR. DURRETT: Yes, sir.

(Witness sworn.)

ZANE SPIEGEL

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. DURRETT:

Q Dr. Spiegel, would you please state your full name and your position with the State Engineer's Office?

A My name is Zane Spiegel, I am Water Resources Engineer, State Engineer's Office.

Q Dr. Spiegel, have you testified before this Oil Conservation Commission before and been qualified as an expert?

A Yes, sir, I have.

Q Specifically referring to Case 1053, which was heard by the Commission in May of 1956 and through several subsequent

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hearings up to September of 1958, did you testify in that case as a witness from the State Engineer's Office on behalf of the Oil Conservation Commission?

A Yes, I did.

MR. DURRETT: If the Commission please, I submit that Dr. Spiegel is qualified to testify as an expert.

MR. PORTER: The Commission considers Mr. Spiegel qualified to testify as an expert.

Q (By Mr. Durrett) Dr. Spiegel, I want to keep this as short as possible, so I'll just ask you a few summary questions. Number 1, are you familiar with the area that is the subject matter of this application today, specifically these oil pools that are described in this Case 2863?

A Yes, I am.

Q Have you, as part of your duties with the State Engineer's Office, had occasion to consider some water samples from this area in the very recent past?

A Yes. I looked through the files in the State Engineer's Office and looked at some well analyses that were provided by the Oil Conservation Commission in and adjacent to this area.

Q Dr. Spiegel, you did hear Mr. Ramey's testimony a few minutes ago concerning whether or not this area was within the Lea County underground water basin?



A Yes.

Q Was his testimony correct?

A Yes, I think so.

Q Dr. Spiegel, based upon your opinion as a professional engineer and a water expert, and based upon your study of this area in the very recent past and your study of this water analysis and your official records in the State Engineer's Office, would you have an opinion concerning whether or not the disposal of produced salt water in unlined pits will constitute a hazard to the fresh water supplies in this area?

A I think definitely that disposal of water to unlined pits in this area will cause the brine disposed in these pits to seep down into the fresh water of this area under the pits, and whether or not the pits are located within the underground basin or not, the water eventually will move into the underground basin to the south, southeast and will so contaminate the water within the basin itself and also adjacent to the basin and fresh water that does exist outside the declared basin.

MR. DURRETT: Thank you, Dr. Spiegel. If the Commission please, that will conclude my examination of Dr. Spiegel.

MR. PORTER: Are there any questions of Dr. Spiegel?
Mr. Kelly.

CROSS EXAMINATION



BY MR. KELLY:

Q Dr. Spiegel, do you know how much salt water is now being disposed, say in a one-month period in unlined pits in this area?

A I have been told that approximately 2722 barrels per day was disposed from the pools.

Q Would that much water being disposed in a month's time or two month's time, would that affect the contamination of the fresh water in this area?

A Well, every barrel of water disposed from this pool will contaminate, when I say contaminate, I mean in this instance that it will double the amount of chloride present in the present water, in 250 barrels of the water that is present, at least from some analyses we have in this area. In other words, each barrel disposed will contaminate 250 barrels by doubling the quantity of chloride that is present in the fresh water there. This means, of course, that roughly several hundred thousand barrels of fresh water will be so contaminated.

Q Would that be the amount of fresh water contaminated in a sixty-day period?

A Per day.

Q So it would be sixty times that?

A That's right.

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MR. KELLY: That's all.

MR. PORTER: Mr. Donaldson, do you have a question?

BY MR. DONALDSON:

Q Doctor, what is the limited safe chloride content for human consumption, or cattle consumption?

A Well, the United States Public Health Service has established standards which are pretty well accepted for what they call interstate carriers of chloride content of 250 parts per million for human consumption. However, humans can drink water somewhat higher than this if they're used to it. However, it is certainly not recommended, and some humans never can get used to water that strong. The limit for cattle is perhaps five times this amount.

BY GOVERNOR CAMPBELL:

Q What is the chloride content of this water at the present time?

A We have two analyses of wells in the vicinity of present production. One shows chloride content of 142 parts per million, the other a chloride of 210 parts per million.

BY MR. NUTTER:

Q You are talking about fresh water that's available?

A Fresh water.

Q What's the chloride content of the disposal water?



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A We have two analyses made by L. C. Case from Tulsa, Oklahoma, one from the Midwest State, and it has 56,000 parts per million chloride, a total dissolved solids of 92,849 parts per million. The L. R. French well Gulf State, 56,750 parts per million chloride and 93,300 parts per million total solid.

Q What's the chloride content of ocean water?

A About 35,000.

Q You have considerably more saturation here than you would have in the ocean?

A Nearly three times.

MR. PORTER: Anyone else have a question? Dr. Siegel may be excused.

(Witness excused.)

MR. DURRETT: If the Commission please, that will conclude our case.

MR. PORTER: Does anyone else desire to make a statement in the case?

MR. WHORTON: Don Whorton.

MR. PORTER: Mr. Whorton.

MR. WHORTON: I would like to say that Tenneco Oil Company concurs with the testimony of Bill Abbott with Rice Engineering, and it will actively pursue the subsurface disposal of water in this field through Rice Engineering in the area.



MR. PORTER: Anyone else?

MR. BRANCH: W. H. Branch, Sun Oil Company. Sun has one well in the Inbe Wolfcamp field. It's a very small water producer, we say it produced just a trace of salt water. We do not anticipate that we will at this time be active in the Rice program, but we do support this idea of doing away with unlined pits, and we are going to make other arrangements.

MR. PORTER: Any further statements? Mr. Irby.

MR. IRBY: The State Engineer concurs in the recommendations of the witness, Joe Ramey, with regard to construction and operation of the disposal system. And also hopes that Bill Abbott will be able to beat the deadline.

MR. PORTER: Mr. Kellahin, do you have a statement?

MR. KELLAHIN: If the Commission please, we, I think, have presented our case that active work will be done and will be pushed as rapidly as possible with the completion of this salt water system.

MR. PORTER: Mr. Kelly.

MR. KELLY: Texaco, Inc. is the operator of one producing well, the State of New Mexico "CQ" Well No. 1, in the South Lane-Pennsylvanian Pool, Lea County, New Mexico. This well was completed on February 15, 1963, with a potential test of 95 barrels of oil per day plus 396 barrels of water per day. The



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well produced for approximately 30 days before being shut in. During this period the produced water was collected in steel tanks located on the lease and trucked from the lease to a salt water disposal well. Texaco found the cost of this procedure to be prohibitive and on March 9, 1963, the subject well was shut in rather than place the produced salt water into an unlined surface pit. This action was taken with the idea in mind that a salt water disposal system would be completed in the very near future. At the time the well was shut in it was capable of producing approximately 60 to 70 barrels of oil per day.

Texaco is actively participating in the negotiations to form the South Lane Salt Water Disposal System, and if satisfactory negotiations can be completed we certainly plan to enter into this system. As of this date, Texaco has not placed any produced salt water onto the surface of the ground or into unlined surface pits. If it can be seen that the completion of a disposal system will require an extended period of time it will be necessary for Texaco to re-evaluate its position in order to remain competitive in this pool.

We believe that all efforts possible should be made to expedite the formation of this salt water disposal system which will eliminate the disposal of salt water into unlined surface pits in this area.



I would like to add that it appears to me that the Commission might find it necessary to prod the operators in this regard and possibly the solution would become more apparent immediately.

MR. PORTER: Mr. Donaldson, did you have a statement?

MR. DONALDSON: No, sir. The only thing, we are proceeding, we have the application in. How the legal situation is, I do not know. We're definitely making progress to get that water in the ground.

MR. PORTER: Does anyone else have a statement to make? In connection with Case 2863, the Commission has decided that it will enter an order effective September 19, 1963 prohibiting the disposal of oil field brines in unlined pits. That gives us about sixty-two days.

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I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 21st day of July, 1963.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1967.

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