BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Case No. 1530

TRANSCRIPT OF HEARING

October 22, 1958

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BEFORE THE
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IN THE MATTER OF:	
Application of Rice Engineering & Operating, Inc. for an order authorizing a salt water disposal well. Applicant, in the above-styled cause, seeks an order authorizing the disposal of produced salt water through its E-M-E SWD Well No. A-32 to be located 1320 feet from the North and East lines of Section 32, Township 21 South, Range 36 East, Lea County, New Mexico. Applicant proposes to inject the produced salt water into the San Andres formation in the interval from 4250 feet to 4600 feet.	Case 1530

Mabry Hall
Santa Fe, New Mexico

BEFORE:

Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: The next case on the docket will be Case 1530.

MR. PAYNE: Case 1530, "Application of Rice Engineering & Operating, Inc. for an order authorizing a salt water disposal well."

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, appearing in behalf of the applicant. We will have one witness, Mr. Abbott.

(Witness sworn in).

W. G. ABBOTT

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

follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q State your name, please?

A W. G. Abbott.

Q By whom are you employed, Mr. Abbott?

A Rice Engineering and Operating, Inc., in Hobbs.

Q What is your position?

A Division manager.

Q Mr. Abbott, have you previously testified before this Commission as an expert petroleum engineer and have your qualifications been accepted?

A Yes, sir.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes sir, they are.

Q (By Mr. Kellahin) Mr. Abbott, are you familiar with the application in Case Number 1530?

A Yes sir, this application is an application to drill a salt water disposal well in the northeast quarter of Section 32, Township 21 South, Range 36 East to dispose of the water in the San Andres formation.

Q Now, referring to what has been marked as Exhibit A, would you state what that shows?

A Exhibit A is a plat showing the area surrounding this proposed disposal well. There is a half mile radius marked on this

exhibit showing the wells that are within a half a mile of the proposed salt water disposal well and also a cross section, "AA" prime, is marked on this plat and that will be taken up on a later exhibit.

Q Now, is there any particular reason for this high spot location which is indicated on the plat, Mr. Abbott?

A Yes, this disposal will be on the Cities Service State "B" lease and they wanted this salt water disposal located such that in the future if we wanted to convert it for water flood purposes, by plugging back and coming into the Queen formation, we could.

Q Now, the exhibit likewise shows the lease ownership according to your best information?

A Yes, sir.

Q Referring to what has been marked as Exhibit B, will you state what that shows?

A Exhibit B is a proposed--it's a diagramatic sketch of the proposed casing program for this well. You will notice that they have the nine and five eighths inch casing set at fifteen hundred feet and we propose to circulate the cement to the surface and then set the seven-inch casing at 4250 and then complete the salt water disposal well on that hole from 4250 to 4600.

Q Will that type of casing program, in your opinion, adequately protect any fresh water zones which might be penetrated by this well?

A Yes sir, and then we will equip this salt water disposal well with tubing string and behind that tubing string we will put a light oil, sweet oil, so that it will protect the outside tubing string and the inside of the casing and we believe with that method of completion, there will be no danger to the fresh water or to the casing.

Q Will that type of completion by the use of tubing and filling the annular space with a sweet oil give you a better control over your injection well?

A Yes sir, we believe that by completing our salt water disposal wells in this manner, that we can put a pressure gauge on the tubing casing annulus and by watching the pressure in relation to the volumes injected, that we can determine when the wells or well is plugged up, or if we get any leaks in the future, we will notice it on the pressure gauge immediately.

Q Referring to what has been marked as Exhibit C, would you state what that shows?

A Exhibit C is a cross section, a completion cross section. It shows up on this Exhibit A as AA prime and this shows the wells that are on this cross section, AA prime, and it shows where those wells are completed and also shows where the salt water disposal well, A-32, will be completed.

Q There are no completions at that depth at the present time?

A No sir, all the wells in that area are in the Eumont pool and most of them are completed either in the Seven Rivers or

Queen formation.

Q Referring to what has been marked as Exhibit D, would you state what that shows?

A That is a tabulation of all the wells in that half mile radius that is drawn on Exhibit A, and it also shows the completion interval, subsea completion interval, and the completion zone of all the wells in that circle.

Q You are referring to the circle which appears on Exhibit A?

A Yes, sir.

Q Actually, there is no production from the San Andres formation for a considerable distance, is that correct?

A That is right. I don't know exactly how close the closest San Andres formation is produced in that area, but it is a considerable distance.

Q It would be in excess of two miles?

A Yes, sir.

Q Now, referring to what has been marked as Exhibit E, would you state what that is?

A Exhibit E is a list of all the operators with addresses that belong to this Eunice-Monument-Eumont salt water disposal system.

Q Rice Engineering and Operating, Inc., is designated as the operator of the salt water disposal system, is that correct?

A Yes, sir.

Q And you are appearing then as an operator of the salt water disposal system in this case?

A Yes, sir.

Q Now, referring to what has been marked as Exhibit F, would you state what that shows?

A Exhibit F is an agreement between Cities Service Oil Company and Rice Engineering and Operating, Inc., setting out certain things that both companies are agreed on for making that salt water disposal well on the Cities Service State B lease.

Q The well then will be drilled by Cities Service?

A Yes sir, Cities Service agreed to drill the well and then sell it to Rice Engineering for the operators in this E-M-E SWD System.

Q At the present time, do you have any log on the San Andres formation available in this area?

A No sir, I do not have a log. We will furnish the Commission with one when we drill the well.

Q What volumes of water do you propose to dispose of in this well?

A We propose to dispose of approximately 15,000 barrels a day in this well.

Q What is the source of this water?

A Well, it will be the Eumont Pool and the Eunice Pool waters, and I believe that's all, the two pools.

Q Has an analysis been run on these waters?

A Yes, we do have an analysis.

Q And in your opinion, they are not potable waters?

A No, they are not potable.

Q And in your opinion, is it necessary that a disposition of this type be made of that water --

A Yes, sir.

Q In the interests of conservation?

A Yes, sir.

Q In your opinion, is the formation you propose to inject this water into, of sufficient permeability and porosity to handle the volumes of water contemplated?

A From all the information we can gather, the San Andres formation will be the best disposal formation in this area. It is very porous, it is a limestone so that it can be acidized at intervals to increase its injectivity and there have been wells in this general area completed in the San Andres for disposal wells, but not in the immediate area.

Q Have those wells been effective as disposal wells?

A Yes, they have been very effective. Pan American has a well in the Hobbs pool that was tested at 909 barrels an hour by gravity into the San Andres formation, and there are two others, two or three other wells completed there in the San Andres formation for disposal.

MR. KELLAHIN: That's all the questions I have, Mr. Examiner.

MR. UTZ: Do you wish to introduce your exhibits?

MR. KELLAHIN: At this time, I would like to offer in evidence Exhibits A through F inclusive.

MR. UTZ: Without objection, the exhibits will be accepted. Are there questions of the witness?

MR. FISCHER: Yes, sir.

MR. UTZ: Mr. Fischer?

CROSS EXAMINATION

BY MR. FISCHER:

Q Mr. Abbott, you think you can get your 15,000 barrels per day into that well under gravity?

A Yes, we feel that if the San Andres is as porous in that area as we think it is, we will be able to get 15,000 barrels a day.

Q As I understand your tubing program, you are going to set a packer and sweet oil above in the --

A No, we will not set a packer. We will just set the tubing and load the annular space with sweet oil.

Q What size tubing?

A We will probably use five-inch casing as tubing.

MR. FISCHER: That's all.

CROSS EXAMINATION

BY MR. UTZ:

Q You say you will use seven-inch casing as tubing?

A No, the seven-inch casing will be the case and then we will use five-inch casing as a tubing string.

Q Five-inch casing?

A Yes, sir.

MR. UTZ: Mr. Irby?

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

CROSS EXAMINATION

BY MR. IRBY:

Q On your Exhibit B, Mr. Abbott --

A Yes, sir?

Q Does the cement in the annulus around your seven-inch casing extend into the annulus between that casing and the nine and five eighths?

A Yes, it will probably come up and cover that annulus, too.

Q Is this 1500 feet at which the nine and five eighths sets below any known fresh waters?

A Yes sir, it is.

MR. IRBY: Thank you.

MR. UTZ: Any other questions of the witness?

(No response).

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Abbott, this sweet oil that you are going to use for taking protective measures, will that just be in the annulus above the salt water?

A That is right, it will be on top of the salt water.

Q And you will put a pressure gauge on that at the surface?

A Yes, sir. When the pressure increases for a known volume injected, or known rate injected, it will rate your pressure. If the pressure increases, then you know that the formation is plugged up.

Q How would you be able to determine from that pressure whether it was the formation that was plugged up or the casing?

A Well, if you had a casing leak, your pressure would drop. It would --

Q And if it builds up, the formation is plugging up?

A Yes, sir.

Q In the event there is oil or gas going through the casing, the pressure would still drop, wouldn't it?

A Yes, sir.

Q What is the top of the San Andres zone in this section?

A Let me see --

Q Your Exhibit Number C, does that show the top of your permeable zone?

A No, that's the top of the permeable in that area. Let's see if we have it on this other--we estimate the top at approximately 4200 feet.

Q There is no production, I believe you said, between the first producing zone above this, which would be the Queen, is that right?

A That is right.

Q And there is no production between the Queen and the area that you intend to dispose at?

A No, sir.

Q What is the next producing horizon below the San Andres zone that you intend to dispose of?

A In that area, I don't think there is any production below that. To the west, oh, five or six miles, it would probably be the Drinkard Pool.

Q And in your opinion, there would be no communication between this San Andres disposal zone and the Drinkard zone that is nearest to this area?

A No, sir.

MR. UTZ: Are there other questions of the witness?

(No response).

MR. UTZ: If not, the witness may be excused.

(Witness excused).

MR. UTZ: Are there any other statements to be made in this case? (No response).

MR. UTZ: If there are none, the case will be taken under advisement.

Let's take a ten-minute recess.

(Short recess).

STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, JERRY MARTINEZ, Notary Public 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 in stenotype and reduced to typewritten transcript by me, and that the same is a true and correct record, to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 24th day of October, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Notary Public

My Commission Expires:
January 24, 1962

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1530, heard by me on Oct. 22, 1958.

....., Examiner
New Mexico Oil Conservation Commission