

BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico

June 7, 1962

EXAMINER HEARING

FARMINGTON, N. M.  
PHONE 325-1182

DEARNLEY-MEIER REPORTING SERVICE, Inc.

ALBUQUERQUE, N. M.  
PHONE 243-6691

IN THE MATTER OF: )

Application of Neil E. Salsich for approval of a )  
waterflood project, Eddy County, New Mexico. )

Applicant in the above-styled cause, seeks )

approval of a waterflood project in the Square )

Lake Pool with the injection of water into the ) CASE NO.

Grayburg formation of the Square Lake Pool )

through five wells located in Section 36, Town- ) 2579

ship 16 South, Range 29 East, Eddy County, New )

Mexico. Applicant requests that the waterflood )

be governed by Rule 701 except that administrative )

approval is sought to allow expansion of the )

waterflood by the conversion of one additional )

well in Unit H of Section 35 prior to response )

from water injection. )

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: Case 2579.

MR. MORRIS: Application of Neil E. Salsich for )  
approval of a waterflood project, Eddy County, New Mexico. )

MR. LOSEE: I'm A. J. Losee, representing Neil Salsich.

I have one witness.

(Witness Sworn.)

(Whereupon, Applicant's Exhibits  
Nos. 1 through 5 Marked for  
Identification.)



ARCHIE SPEAR,

called as a witness herein, having been first duly sworn on oath,  
was examined and testified as follows:

DIRECT EXAMINATION

BY MR. LOSEE:

Q Would you state your name, please?

A Archie Spear.

Q Where do you live, Mr. Spear?

A Artesia, New Mexico.

Q What is your occupation?

A Petroleum Consultant.

Q Have you previously testified before this Commission  
and had your qualifications accepted as an expert?

A Yes, sir, I have, Mr. Losee, in 1958. I do not recall  
the particular case number.

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

MR. NUTTER: Yes, they are.

Q (By Mr. Losee) I'll refer you to what has been  
marked Applicant's Exhibit No. 1 and ask you if you will state  
what that portrays?

A This is a plat of the proposed waterflood project and  
showing a two mile area around the project.

MR. LOSEE: Mr. Examiner, we only have one copy which  
is the same exhibit that's attached to the Application.

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MR. NUTTER: Okay.

Q (By Mr. Losee) Your plat colors in yellow two leases, one denoted the Hollis Lease and one the Leonard Lease. In addition, part of the project area, would that not include the Featherstone Lease in the Section right to the south, Section 1, 17, 29?

A Yes, sir. We do intend to include the Featherstone in the project.

Q Does that Featherstone Lease comprise the North Half Northwest Quarter and the Northwest Quarter of the Northeast Quarter?

A Yes, sir.

Q Is Mr. Salsich the operator of those three wells in that lease?

A Yes, he is.

Q Actually he is the operator of all of the wells within Section 36 except the 80-acre tract which is not colored in yellow, the North Half, Northeast?

A Yes, that's right.

Q Now, to the west of this project area is a lease which is denoted General American Oil Company of Texas, is that correct?

A Yes, it is.

Q Did General American join in this Application?

A They consented to the Application.

Q Actually as part of Mr. Salsich's Application, did you

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not request the Commission to make an exception to Rule 701 to provide that the Number 5 could be approved administratively for conversion to an injection well?

A Yes. Prior to a response of the Rule 701, paragraph E of the Rule.

Q At the time the Application was filed, did Mr. Salsich have any written agreement with General American with respect to this lease line?

A No, he did not. Only oral negotiation.

Q Since that time and, as a matter of fact, on June 4th has he entered into a written agreement with them providing that subject to the Commission's approval, they will place their No. 5 Nunnely on injection?

A Yes, they have. He has received that instrument.

Q Is that available for the Commission's examination?

A Yes.

MR. LOSEE: Mr. Examiner, would the Commission like to examine the instrument of General American?

MR. NUTTER: It is an agreement whereby General American promises to put that well on injection?

MR. LOSEE: Yes.

MR. NUTTER: I don't think we need to see the instrument.

Q (By Mr. Losee) What is the source of water for this proposed project, Mr. Spear?



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A The source of water will be purchased from a commercial water supply company. There are two in the area and tentatively it is set up with the Caprock Water Company.

Q Have they tendered the contract to Mr. Salsich?

A Yes, they have.

Q In connection with this Application you furnished electric logs on the five wells shown as injection wells, did you not?

A Yes, I did.

Q What are those five wells, the name of them?

A Starting at the top, just following on the plat would be, the Neil Salsich No. 5 Leonard-State, then, the Neil Salsich No. 1 Leonard-State, the Neil Salsich No. 4 Leonard-State, and the Neil Salsich No. 2 Leonard-State, and the Neil Salsich No. 1 Hollis-State.

Q Did these electric logs reflect the pay that was presently producing in all five of these injection wells?

A Yes, it did.

Q What zones are presently producing?

A There are two zones in the area that is productive, one of them the ~~MeTex~~ of the Grayburg and the Premier zone of the Grayburg. The ~~MeTex~~ of the Grayburg and the Premier of the Grayburg.

Q Do you anticipate that when injection is commenced in these five wells that both of those zones will take water?



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A Yes, they will.

Q Referring now to what has been marked Exhibit No. 2, would you explain to the Commission what that portrays?

A Exhibit 2 is the casing program of the five proposed injection wells. It also reflects the top, theoretical top, of the cement, calculated on the basis of 100 percent fill-up with the number of cement used and, also, reflects the perforated zone.

Q All of these injection wells have the surface pipe set in cement?

A Yes. This Exhibit 2 shows, also, the surface pipe and the number of sacks used and the depth set.

Q Do you know if that surface, the cement was circulated to the surface?

A I do not know if it was or was not.

Q Now, the production string, based upon your calculation of the theoretical top, that is above the perforations?

A Yes, it is.

Q By several hundred feet?

A It exceeds the minimum that is set out in some Commission rule about perforations, I have forgotten it. I believe it's 200 feet.

Q Isn't actually the minimum distance between the cement and the perforations based on this theoretical calculation on these five wells 290 feet?



A Yes, it is.

Q Each well, I notice, has two sets of perforations, is the lowest one the Metex?

A The lower one is the Premier.

Q The Premier. How does Mr. Salsich propose to inject water into these five wells?

A It is proposed and requested that we be permitted to inject water down the casing.

Q Is there any fresh water available in this area for waterflood?

A There is not to my knowledge.

Q In the event the Commission were to approve such an injection program, would Mr. Salsich make periodic tests of his casing to see if he was getting any leakage?

A Yes, sir. That would be a very important procedure in the operation of the project, to be sure that we weren't losing water other than above the cement.

Q How much per well saving would accrue by reason of being allowed to inject down the casing as opposed to using a tubing and packer?

A If we calculate the salvage value of the tubing, plus the cost of setting and the cost of the packer, it's calculated at \$1,800.00 per well additional cost in order to inject down the tubing and under a casing, I mean, under a packer.

Q You've arrived at \$1,300.00 for the tubing and \$500.00

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approximately for the packer in setting it?

A Yes.

Q Now, let's turn to Exhibit 3. Would you explain to the Examiner what that portrays?

A Exhibit 3 is a decline curve on the Neil Salsich Hollis-State Lease.

Q How many wells are there on the Hollis-State Lease?

A Four wells.

Q What is the present production on that lease?

A Using the last figure that we have here, which is February of '62, it is shown to be 330 barrels total for the month of all four wells.

Q Or an average of around 55 barrels per well?

A Yes.

Q Now wait. 80 to 85 barrels?

A 330 by 4 is 85 barrels, Mr. Losee.

Q Thank you.

A Thank you for the prompting.

Q Are all of these wells flowing or pumping?

A They're all pumping.

Q Do you know how much production this Hollis Lease has had, can you tell the Examiner?

A I do not believe I have that figure.

Q The cumulative production?

A I can make an estimate.

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Q Would you estimate the cumulative production of these four wells?

A It could be estimated at 105,700 barrels.

MR. NUTTER: 105,700?

A Yes.

Q (By Mr. Losee) To approximately what date?

A Excuse me, that may not be right. May I have a little time?

Q Sure.

A I can get an accurate total of the Neil Salsich Hollis-State and the Leonard-State leases and the Featherstone lease.

Q Okay.

A The combination of the Hollis-State and Leonard-State is 286,400 barrels to August 1st, 1961.

Q 286,000 barrels. Are there 9 wells on the Leonard lease?

A Yes, there are.

Q And 4 on the Hollis?

A That's right.

Q So, you would divide the 286,000 by the 13 to get the total average cumulative production?

A That is right.

Q Approximately 22,000 barrels per well?

A Yes, sir.

Q Now, referring to Exhibit No. 4, is that production



history of the Leonard-State lease?

A Yes, it is.

Q What does that reflect to be, the production of that lease?

A The month of February, 1962, 1,550 barrels for the month for the total of the 9 wells.

Q Have you also calculated what the production is on the Featherstone lease?

A Yes, I have.

Q What is the present production of that lease per month?

A December of 1961 --

Q It was producing how much?

A Just one minute. 553 barrels, for the month.

Q For the three wells?

A For the three wells, or 184 barrels per well.

Q In your opinion have those three leases; namely, the Hollis, the Leonard and the Featherstone; reached an advanced stage of depletion?

A Yes, they have.

Q Are they what would commonly be referred to as stripper wells?

A My definition, they would be stripper wells.

Q Do you have any figures on the General American lease as to those three wells?

A No, sir, I do not.

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Q Do you have a general knowledge of the wells in this area so that you can state, in your opinion, whether or not those three wells are in the advance stages of depletion?

A I do know, by observation, that these three wells are of the same classification as the other wells in the area, or, in a stripper state.

Q Please refer to what has been marked as Exhibit No. 5 and explain to the Commission what that portrays.

A Exhibit 5 is a list of all of the wells that would be involved in this project area, excluding the three General American wells. There's the five proposed injection wells and 12 affected producing wells.

Q Was this Exhibit prepared for the purpose of calculating project allowable?

A Yes, it was.

Q How many wells do you calculate in the project that are owned by Mr. Salsich?

A 17 wells, total.

Q So that the project area allowable applicable to his leases would be .714 barrels?

A That is right.

Q Also, are not the three General American wells, one an injection well and two a producer, would they not be in the project area as defined by the Commission rules?

A Yes.



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Q They would be entitled to an allowable of 126 barrels?

A Yes.

Q How much water, initially, is proposed to be injected into each of these wells per day?

A It is calculated 100 barrels per day per well at the initial pressure of 1,000 pounds.

Q Have you notified the offset operators and the royalty and overriding royalty owners of this pending Application?

A I have notified the offset operators, I have not notified overriding royalty owners. I have notified the State Land Office, the State Engineer, and the U.S.G.S.

Q In your opinion, do you feel like the institution of this project would be in the interest of conservation and prevent waste of oil?

A Yes, it would.

Q What would you estimate the secondary recovery, times the primary, would be in this project?

A A rough estimation of that would be the secondary recovery would equal the primary recovery, or one to one ratio.

Q Is it Mr. Salsich's intention to operate under Rule 701 as far as this project is concerned?

A Yes, it is.

Q Were Exhibits 1 through 5 prepared by you or under your direction?

A Yes, they were.



MR. LOSEE: I move the introduction of the Exhibits 1 through 5.

MR. NUTTER: Applicant's Exhibits 1 through 5 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 5 Introduced and Admitted into Evidence.)

MR. LOSEE: I have no further questions.

MR. NUTTER: Does anyone have any questions of Mr. Spear?

MR. IRBY: Yes.

MR. IRBY: Mr. Irby.

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

CROSS EXAMINATION

BY MR. IRBY:

Q What will be the source of the water for this flood?

A Mr. Irby, our tentative plans, it would be purchased from the Caprock Water Company and I believe that water would be supplied through their Watson Lease, so referred to as their Watson Lease, which is in Township 17, 28 and parts of 16, 28 which is approximately six miles west of this.

Q That's where the source wells are?

A Yes.

Q That's the end of the pilot plan?

A That is their water supply.

Q Would you give me that township and range again, please?

A 16, 28 and 17, 28. And I am not familiar with the



exact locations of those leases, Mr. Irby. I know it's in the general area, there.

Q In your Application you say that the Hollis-State No. 1, the surface casing is set at 491 feet and cemented with 75 sacks. Can you tell me what type of formation there is at 491, that depth?

A Mr. Irby, I cannot testify as to the exact formation. I think I would be fairly accurate in assuming that all of the wells, the surface pipe was set in the salt of the Salado formation, as some refer to it.

Q Can you testify that it is below the sand and caliche?

A Yes, it is.

MR. IRBY: Thank you. That's all.

Q (By Mr. Irby) That's in each case?

A In each of the five wells, Mr. Irby.

MR. IRBY: Yes, thank you.

**BY MR. NUTTER:**

Q Mr. Spear, what type of test did you have in mind when you said that Mr. Salsich was willing to make periodic tests to insure that water wasn't going into the wrong place in these wells?

A If there were any particular test in mind it would be that a packer would be set above the perforations and tested.



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Q Pressure test above the packer?

A Yes, I think we could work out a procedure that would be less expensive than that, and also satisfactory to the Commission. During the course of operation, we would like to reserve that in case that condition does exist, such as injectivity test or an injection profile that we could file in lieu of a pressure test.

Q The pressure test would be one alternative and some other satisfactory means might be suggested later?

A Yes. If it is necessary during the course of operation to run those other tests.

Q Does Mr. Salsich plan or would it eventually be the plan to convert a couple of wells down there on that Featherstone lease to injection?

A If all of the if's of the project could be worked out, I'm sure that those would be converted to injection wells.

Q Would the No. 2 and the No. 3 be the ones?

A They would be the proposed wells if the project reached that state.

Q That is a Federal lease there?

A Yes, it is.

Q And under the existing flood as requested you have two wells on State Land, being the Hollis No. 1 and the Leonard No. --

A 2.

Q Wait a minute, what is the number of that?



A Oh, that's 5.

Q That's No. 5 I believe?

A Excuse me.

Q Pushing oil to a Federal lease and only one well on a Federal lease reciprocating by pushing some oil back, if two wells were put on injection on the Featherstone lease, then, that would even things up maybe, wouldn't it?

A Yes, it would.

Q That would have to remain to be seen after the project has been tried and the success of it evaluated?

A Determined by the response to the pilot project.

Q Do you know what General American's plans are as far as putting that Federal well on injection? What does the agreement call for?

A Could I discuss that --

MR. LOSEE: I can make a statement. The agreement calls for subject to the Commission's approval and the availability of the water, it will be put on injection.

MR. NUTTER: It will be put on injection simultaneously with the Salsich wells?

MR. LOSEE: Yes.

MR. NUTTER: That's the essence of the agreement to commence injection on the other side of the line?

MR. LOSEE: Yes.

MR. NUTTER: Are there any further questions of Mr.

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Spear?

MR. LOSEE: I have a couple of questions, please.

RE-DIRECT EXAMINATION

BY MR. LOSEE:

Q With respect to this agreement, Mr. Spear, has a copy of that been submitted to the State Land Office for their approval?

A It has not.

Q Will Mr. Salsich do that?

A Yes, he will.

Q Now, this Section 36 is all land owned by the State of New Mexico, do you know if that is one common beneficiary?

A I do not know for sure. I believe it is a common school beneficiary.

MR. LOSEE: I think that's all.

MR. NUTTER: Any further questions of Mr. Spear?  
He may be excused.

(Witness Excused.)

MR. NUTTER: Do you have anything further, Mr. Losee?

MR. LOSEE: If there's any question in the Commission's mind about the procedure of asking on this General American well, we intended they couldn't join in the Application because they had not reached an agreement. We intend by our testimony today to lay the foundation for administrative approval which, of course, they will have to make the Application and submit the

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