

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 Waterflood Associates,
Inc. for approval of a waterflood pro-
ject, Eddy County, New Mexico. Appli-
cant, in the above-styled cause, seeks
approval of a waterflood project in the
Square Lake Pool by the injection of
water to be through two wells located
in the NE/4 of Section 3, Township 17
South, Range 30 East, Eddy County, New
Mexico; applicant requests that the
waterflood project be governed by
Rule 701.

CASE NO.
2581

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: We will call Case No. 2581.

MR. MORRIS: Application of Waterflood Associates, Inc.
for approval of a waterflood project, Eddy County, New Mexico.

MR. LOSEE: A. J. Losee, Losee and Stewart, Artesia,
New Mexico, appearing for the applicant. I have one witness, Mr.
Porter.

MR. MORRIS: Let the record show Mr. Porter was sworn in
Case 2580.



HAROLD PORTER,

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

(Whereupon Applicant's Exhibits 1 through 7 marked for identification)

DIRECT EXAMINATION

BY MR. LOSEE:

Q State your name, residence, and occupation.

A My name is Harold Porter; I reside in Artesia, New Mexico. I'm a petroleum engineer.

Q Have you previously testified before this Commission?

A Yes, sir.

Q Please refer to Exhibit No. 1 and explain what that portrays.

A Exhibit No. 1 is a plat showing the area of the application, the completions marked Tenneco are now Newmont Oil Company. The plat also shows the established waterflood pattern in Section 34 in red. This is the pilot waterflood presently being operated by Newmont Oil Company. The areas marked black show the Newmont's plans for immediate expansion. As a matter of fact, they are ready to expand right now. The area outlined in yellow is Waterflood Associates W.F.A. Parke lease. The lines in green show the further possible expansion of this program to include our Parke lease and the offsetting leases.

Q Has Newmont's flood, the area marked in red, has that

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shown response to their pilot operation?

A Yes, sir, it has shown some response; however, they have been limited in the availability of water until the present time. It has not performed as well as their other flood in that same section; however, they feel, and so do we, that with additional water injection, that it will be a very satisfactory flood.

Q Do you know if they have applied for approval to expand into this area in black?

A Yes, sir, that area in black is already authorized by the Commission.

Q Please refer to Exhibit 2 and explain what that portrays.

A We do not have available any electric logs in this immediate area; however, I have a cross section which is drawn on north-south directions, as shown in the little location map down in the lower righthand corner of this Exhibit 2, and it shows the various zones that were open. It shows that the productive zones are zones 5 and 6 of the Grayburg formation. However, most of these wells have subsequently been deepened to include the Lovington Sand. They were deepened after this was drawn and it's not shown on here, but they are now deepened into the Lovington Sand.

Q Do these zones 5 and 6 pretty well correlate across all of these existing wells?

A Yes, sir, as you can see on the cross section, zones 5 and 6 are fairly continuous across the north-south breadth of this



map, which the little location map shows the injection wells of Newmont to the north of our lease.

Q Now, you propose to convert to injection your wells 2 and 4?

A Yes, sir.

Q Well 2 is portrayed on this cross section, is it not?

A Yes, sir, it is. It's shown as the W. F. Dodson Parke No. 2.

Q These are zones of the Grayburg formation, these zones 5 and 6?

A Yes, sir, they are.

Q And then the Lovington Sand, which you state is now open to production, is it producing in this area, the Lovington Sand?

A Yes, sir, it is. All these wells on our lease have been, I believe, with the possible exception of one. I'll discuss that further when we get to that exhibit, but I know that three of our wells have been deepened to the Lovington Sand.

Q And they are productive?

A It is productive.

Q Please refer to Exhibit 3A and explain what that portrays.

A Exhibit 3A is a tabulation of the oil production from this lease from 1946 up through March of '62. The production has declined to where the lease is making less than 100 barrels per month, which is on the order of one barrel per day per well. That would indicate that these wells are in the advanced stage of

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depletion and are commonly classed as stripper wells.

Q Based on your cumulative figure of 117,619 barrels for these four wells, that would mean that each well had produced approximately 29,000 barrels of primary oil?

A Yes, sir, that's pretty close.

Q Refer to Exhibit 3B and explain what it portrays.

A Exhibit 3B is merely a graphical presentation of the data on 3A. It shows the production decline and the cumulative oil curve; the drastic drop in this production started in January, '62, due to mechanical failures in one of our wells, and it hasn't been remedied due to the fact we propose to start water flooding this lease and we will remedy at that time. But nevertheless, it is on a fairly low production rate.

Q Please refer to Exhibit 4 and explain what it portrays.

A Exhibit 4 shows the well data for each well on the lease and is self-explanatory, I believe. All of our wells, as I was discussing before, have been deepened with the exception of Well No. 4, and Well No. 4 will be deepened to include the Lovington Sand. The wells applied for for injection are Wells No. 2 and 4, and these wells each have 8 5/8th casing set at 500 and 495 feet respectively and each cemented with 50 sacks. This is deep enough to be cemented into the salt section, and 5 1/2-inch production casing in each instance is set at 2840 feet and 2850 feet respectively and cemented with a hundred sacks. This gives a calculated cement top on the production string of roughly 1450 feet.



Therefore, we have two strings of casing and two cement jobs, which would give ample and satisfactory protection for any surface water in the area which might possibly be in the area.

Q The lower part of this exhibit reflects the treatment given to the well?

A Yes, sir, that's correct. It shows the stimulations and the initial potential in barrels per day, present productive date in barrels per day. As you can see, it's on the order of one barrel per well per day. Well No. 3 is plugged and abandoned and will have to be redrilled as a producer. The proposed casing program for that well will be the same as these others.

Q What is the source of your water?

A We have made arrangements to purchase pressured water from Newmont Oil Company's plant to the north.

Q Will that supply be adequate for your project?

A Yes, sir, they have an adequate and satisfactory water source. They are getting their water from the Yucca Water Pipeline Company.

Q By what method do you propose to inject the water into these two wells?

A We propose to inject water down the casing.

Q Will your system be closed?

A Yes, sir, our injection system will be closed, as nearly all of them are in this part of the country.

Q What will your initial injection rates be?

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A It's estimated that we'll start out at about 500 barrels a day and our maximum pressures injecting at the rate that we think it will be necessary, will be around 1500 psi.

Q Do you feel like your program of injecting down the casing will protect any water that might be present in the area?

A Yes, sir, we have a casing program which should satisfactorily protect any shallow water which might be in the area. Even if we had a leak in our long string above the top of the cement, we would still have the 8 5/8ths casing, which is cemented to protect the shallow water.

Q Have you notified the State Engineer's Office of your application?

A Yes, sir, and as Exhibit 5, we have a letter to the State Engineer's Office giving him the particulars in this case.

Q Have you discussed this application with him?

A Yes, sir, I have.

Q Have you notified the United States Geological Survey, the royalty owner under your lease, of the application?

A Yes, sir, I have a letter dated June 4 to the USGS, USGS at Artesia, which explains this application and this hearing, and I have discussed this with him and he has indicated that the royalty owner will not object to this injection.

Q Have you received any correspondence from any operator conducting flood in this area?

A Yes, sir, our offset operator to the north, Newmont Oil



Company, has sent a letter which says that they support our application as it is presented with our Parke 2 and 4 as injection wells. I have also contacted our other offset operators and we are in the process of discussing with them the conversion of their wells on the same pattern to go ahead and balance out across lease lines, and fulfill the full pattern here that needs to be.

Q In your opinion, would this project waterflood that you request promote conservation of natural resources and prevent their waste?

A Yes, sir, there's no question about it; we do have secondary reserves here which will be recoverable by this method which otherwise would be wasted and would not be recoverable by primary means.

Q What ratio of secondary to primary oil do you anticipate recovering in this project?

A It's very difficult to say; however, based on the other waterflood in this same area, the same zones, which Newmont is conducting east of here, I would say we'll get between one and one-and-a-quarter times our primary recovery.

Q Did you prepare Exhibits 1 through 4 or were they prepared under your direction?

A Yes, sir.

Q Exhibits 5, 6 and 7 are copies of letters you have mailed or letters that you have received?

A Yes, sir.



MR. LOSEE: The Applicant moves the introduction of Exhibits 1 through 7.

MR. NUTTER: Applicant's 1 through 7 will be entered in the record.

(Whereupon Applicant's Exhibits 1 through 7 entered in evidence.)

MR. LOSEE: I have no further questions at this time.

MR. NUTTER: Are there any questions of the witness?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Porter, is this the flood which was -- the flood to the north of your proposed flood here, the one which was authorized back in 1959 for Texas Consolidated Oils and then subsequently taken over by Newmont?

A Yes, sir, I believe that's correct. This flood was originally authorized by Texas Consolidated and then sold to J. Cico Thompson and Newmont purchased this from these people.

Q What has been the measure of success that they have encountered up here in this four-section or four-well pilot?

A Well, sir, I do not have the exact figures; however, I did talk to Newmont's engineer just day before yesterday, and he told me that they had experienced a pretty good response. However, he said that their big trouble was the fact that they were limited in their water injection and he felt like as soon as they could increase injection and get these other wells on that they have

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permitted and which they are presently working on to convert them, that he felt like their response would be real good.

Q What was the problem on water injection, was it insufficient water or tight formation or --

A Yes, sir, it was -- it was insufficient water and also very, very poor injection equipment. They are building a new plant and of course they are tying on to the Yucca water system. I believe that previously when Texas Consolidated was operating this pilot flood that they had shallow water well up to the north which would only make about 500 barrels a day, and of course they were not putting in nearly enough water to do very much good.

Q Now, you say that the one well that has never been deepened will be deepened and that the one that was plugged and abandoned will be re-entered?

A Either re-entered or else a replacement well drilled.

Q On the same 40?

A Very close to it, yes, sir.

Q And injection would be down the casing in each instance?

A Yes, sir. These other wells to the north are being injected down the casing satisfactorily and we feel that ours will be doo.

Q This will be fresh water in a closed system?

A Yes, sir, we'll be using the Yucca which comes off the Caprock.

Q Any further questions of Mr. Porter?

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You may be excused.

(Witness excused.)

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

MR. LOSEE: Nothing further.

MR. NUTTER: Did you have any questions?

MR. IRBY: No questions, a statement.

In view of the testimony and the Exhibit 5, the State Engineer offers no objection to the granting of this application.

MR. NUTTER: Anything further in this case? We'll take the case under advisement and call Case 2582.

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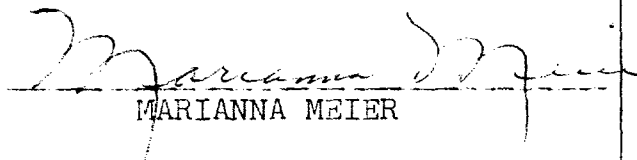
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STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, MARIANNA MEIER, NOTARY PUBLIC in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of proceedings was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.


MARIANNA MEIER

My Commission Expires:

I do hereby certify that the foregoing is a complete and correct transcript of the proceedings in the Enforcement of Case No. 2581, heard by me on June 7, 1962.

 , Examiner
New Mexico Oil Conservation Commission

