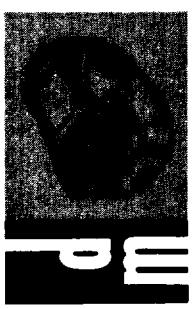

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 24, 1967

EXAMINER HEARING

IN THE MATTER OF:	
Application of Texaco Inc. for a pilot waterflood project, Lea County, New Mexico.	CASE NUMBER 3590

BEFORE:

ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 3590.

MR. HATCH: Case 3590, Application of Texaco Inc. for a pilot waterflood project, Lea County, New Mexico.

MR. KELLY: Booker Kelly of White, Gilbert, Koch and Kelly of Santa Fe, appearing on behalf of the applicant. I have one witness and I ask that he be sworn.

(Witness sworn.)

E. D. McCARTER

called as a witness on behalf of the applicant, first having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position and employer, please?

A E. D. McCarter, Texaco, Incorporated, district proration engineer at Hobbs, New Mexico.

Q Have you previously testified as an expert witness before this Commission?

A Yes, sir.

(Whereupon, Applicant's Exhibit Number 1 through 6 were marked for identification.)

Q Referring to what has been marked as Applicant's Exhibit 1, would you state what Texaco seeks by this application?

A Exhibit Number 1 is an area map showing the Lazy-J Pennsylvanian Pool with a proposed pilot waterflood project outlined in red, the wells to be included in this project circled and colored red, with the proposed injection well, with a slash symbol through it as indicated by the legend below.

We propose to inject water into this Number 1 Texaco's State of New Mexico 'BV', Tract 1 lease.

Q In referring to Exhibit 2, which is a structure map, would you give the Examiner some history of this field?

A This structure map is abbreviated to show only the controlled points. It is mechanically contoured, it is a portion of a northwest southeast trending nose, the field is delineated on the north by a permeability barrier and porosity pinch out. To the south and southeast, the field is still under development. The field was discovered, oh, I believe that was October of '52 by Gulf's Number 1 State "A-N" located in Unit "K" of Section 27, Township 13 South, Range 33 East. Development was essentially complete by 1955. In July of 1966, Texaco drilled the State of New Mexico BYNCT-1 Well Number 2 located in Unit "A" of Section 35 which flowed at a top allowable rate and since that time the wells to the south and to the east of this location have been drilled. I think there are eleven all total now, the latest completion being the Huber

Corporation Well Number 1-A in Unit "A" of Section 2-13 -- no, 14-33. It is shown as a location on this map right below the C and the O. It has now been completed. Texaco has extended the field as far south as Unit "N" in Section 3 of 14-33.

Q But as far as the project area, that part of the pool has pretty well played out.

A Yes, with the exception of one well. One well in the original developed area, Skelly's Well "BD", Well Number 1 located in Unit "F" of Section 35 is still a flowing oil well which would indicate that there is possibly some permeability barrier between this newer portion of the field and the older portion.

Q What is the present status of the three wells in the project area?

A The three wells in the proposed project area, Well Number 1 is presently pumping at a rate of two oil. Well Number 2 was temporarily abandoned, effective May 1st of this year. Well Number 3 is currently pumping at the rate of seven oil.

Q You feel that primary production is essentially exhausted, then?

A In this portion of the field, yes, sir.

Q Now, going on to Exhibit Number 3, would you give the production history of the wells involved?

A This is a production plot showing oil, water, cumulative oil and gas-oil ratio for the three wells within the proposed project area. You will note that the production started in 1953, reached a peak and started a rapid decline. In 1955 the three wells were entered and deepened from 125 to 150 feet and opened up an additional pay section and since then, the field has been on a practically steady decline except for one reversal trend in 1958 which has gone unexplained. The gas-oil ratio, as you will notice, is, looks like it has peaked around 9,000 to one, it has started to drop which is further evidence for substantiating that this portion of the field is under a solution gas drive.

Q Can you give any estimate of the response you expect from this pilot project?

A No, not at the current time. You will notice that the low production, and referring back to Exhibits Number 1 and 2, which indicate that they are pulling quite a few wells plugged and abandoned in the field. We did not believe that the field was floodable, but with this new production, we feel we will have to make an attempt to see if secondary recovery operations are economical.

Q Are there any other secondary recovery programs in the area that would give you any indication --

A There was one in the Saunder's Field which is, it

is about ten miles south, the Saunder's Field, called the Saunder's Wolfcamp, although they are comparable pay zones with the Lazy-J, they had a pilot waterflood project down there which was not an outstanding success, however there has been a unit formed in the Saunder's Field and I think they have a double five spot going at the present time.

Q Referring to Exhibit 4, which is your diagramatic sketch of the injection well, would you describe your casing program?

A Thirteen and three-eighths inch casing was set in a seventeen and a half inch hole at 353 feet. It was cemented with 350 sacks and cement circulated. Nine and five-eighths inch casing was set in twelve and a quarter inch hole at 4,059 feet cemented with 2,080 sacks and the cement circulated.

Five and a half inch casing was set at 9660 and cemented with 450 sacks. The top of the cement is at 8,075 feet by a temperature survey. The well was drilled deeper as have all three wells from 9660 to 9800. This is a four and a half inch hole, four and three-quarter inch, excuse me.

Q You are going to have plasticoated tubing and water in the annulus, right?

A Yes, plasticoated tubing will be run on a packer with the packer set at approximately 9600 feet. Injection will be through perforations from 9612 to 9652 and an open hole section

from 9660 to 9800.

Q Now, I notice you show perforations of 9143 to 9155. Would you describe what that is to the Examiner?

A This is a portion of the Wolfcamp zone which was perforated in 1962 in an attempt to increase production. The zone was treated with 3,000 gallons, again retreated with 6,000 gallons, swabbed dry. The zone was not squeezed. Instead the equipment was pulled out and a production string run back in and the well placed back on production. There was a production increase from the well at the time it was placed back on production. However, this production increase was short-lived so it is believed that this was an accumulation of oil from the original pay zone and these perforations from 9143 to 9155 were nonproductive.

Q All right. Do you plan to squeeze those perforations?

A No, sir. We plan to load the back side of the hole with inhibited water and keep a check on the fluid level if we cannot get the fluid to stand to the surface, and if there is any change in the fluid level, then we will go back in and squeeze off the zone.

Q But you feel that the fluid will not escape into those perforations?

A No, sir, I do not. This zone is, by the way, not open in any other well.

MR. KELLY: Mr. Examiner, I might point out at this time that there is a letter from the State Engineer, or at least there should be in your file, giving approval to this application. I talked to Mr. Irby this morning. He did not have a diagramatic sketch and therefore did not know about these perforations, but Mr. McCarter and myself both discussed these with him and he said that he would leave the decision in your hands. He had no particular position to take on the matter. However, he felt that if the testimony was sufficient, that he didn't have any further objection.

Q (By Mr. Kelly) Do you feel the insulation you have shown on Exhibit 4 -- well, first going to Exhibit 5, would you state what type of water you will be injecting into it?

A Well, the water that will be injected will be produced water from Texaco's properties in the Lazy-J Pennsylvanian Field. This is a salt water as evidenced by Exhibit Number 5 which is a water analysis performed by the Western Company at the request of Texaco on its State of New Mexico AQNCT-11 Well Number 1. This well produces approximately 110 barrels of water per day so it will be one of the major sources of produced water that will be injected.

Q Do you feel your casing program is adequate to protect against corrosion problems?

A Yes, sir.

Q Now, what is your expected injection rate on this project?

A The expected injection rate is 350 barrels of water per day at the outset.

Q And do you have any idea whether that will increase?

A With continued development, I feel sure it will increase.

Q And how about your supply, what is that now?

A The supply?

Q Of water. When you say 350, is that your, you are going to be injecting all the water that you produce?

A All the water we produce will be injected into this well.

Q And you feel that your production rate of water will increase?

A Yes, sir, as long as development continues I feel in this portion of the field we will find additional water.

Q What do you think would be the optimum injection rate for this project?

A The optimum injection rate as far as controlling any flood front, as well as you can with one well, would be approximately 500 barrels a day.

Q If the project is a success and you need more water, what sources do you anticipate getting them from?

A At the current time, we have no additional source of water. If the project is a success and additional water is needed, we would have to seek it and we would have to cross that bridge when we came to it.

Q What are you doing with your water now?

A A portion, a small portion is being put into a pit on the BVNCT-1 Lease. The major portion of the water located down on the AQ, if you will look at your map, which is located in Section 3 of 14-33 is being collected in a tank and hauled by truck from there. These two wells, Wells Number 1 and 2, one produces 110 barrels of water a day and the other one produces 140 barrels of water per day.

Q Would you state what your injection pressure would be?

A We feel the injection will be on a vacuum.

Q And Exhibit Number 6 is a log of the injection well?

A Yes, sir. This is intended as a log. I might point out it is not marked on any of your exhibits, Zone 2 which is the Contoured Horizon on Exhibit Number 2 is located at 9751 on that log. Normal completions in the field are in the comparable interval from 9600 to 9800 feet or below in the rest of the field.

Q I take it, then, that the purpose of this application is to get approval so you can see if any more of

the oil can be produced out of this otherwise depleted zone? And would the granting of this application at least help Texaco determine whether further secondary recovery would prevent waste in the area?

A Yes, sir.

Q Were Exhibits 1 through 6 prepared by you or under your supervision?

A Yes, sir.

MR. KELLY: I move the introduction of Texaco's Exhibits 1 through 6.

MR. UTZ: Without objection, Exhibits 1 through 6 will be entered into the record of this case.

(Whereupon, Applicant's Exhibit Numbers 1 through 6 were received in evidence.)

MR. KELLY: That's all we have on direct.

CROSS EXAMINATION

BY MR. UTZ:

Q About these perforations on your Exhibit Number 4, 9612 to 1952,--

A Yes, sir.

Q -- are they squeezed off?

A No, sir. The Commission records so indicate them to be squeezed off, however, there is nothing in Texaco's records to show that this operation was ever performed.

Q Do you propose to leave them open?

A Yes, sir. This was the original pay zone in the area produced for two years and then the additional pay zone was opened up after drilling of additional wells, we went in and deepened these wells because we did find production deeper, also.

Q Where was it you were going to put inert water?

A Behind the packer in the tubing casing annulus.

Q You don't think you will lose water up to perforations of 9143?

A No, sir.

Q That plasticoated tubing is internally plasticoated, isn't it?

A Yes, sir.

MR. UTZ: Any other questions of the witness? He may be excused.

(Witness excused.)

MR. UTZ: Statements?

MR. HATCH: I have a letter from the State Engineer's office dated May 22nd, 1967, reading part of it, only, "It appears that the stated plan of injection would not cause a threat of contamination if the packer is set above the lower end of the production casing and below the top of the cement surrounding the casing. Signed by Frank E. Irby, State

Engineer."

MR. UTZ: The case will be taken under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, JERRY POTTS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of hearing 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.

NOTARY PUBLIC

My Commission Expires:

July 10, 1970

I do hereby certify that the foregoing is a [illegible] record of the proceedings [illegible] hearing of Case No. 3570 heard [illegible] 67

[illegible], Examiner
New Mexico Oil Conservation Commission

dearnley-meier
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