

DEARNLEY-MEIERS REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 21, 1963

EXAMINER HEARING

IN THE MATTER OF:)

Application of General American Oil)
Company of Texas for a waterflood project,)
Eddy County, New Mexico. Applicant, in)
the above-styled cause, seeks authority to)
institute a waterflood project by the in-)
jection of water into the Queen formation,)
High Lonesome Pool, Eddy County, New Mexico,)
through 16 wells in Sections 11, 12, 13 and)
14, Township 16 South, Range 29 East.)

Case 2755

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 2755.

MR. DURRETT: Application of General American Oil
Company of Texas for a waterflood project, Eddy County, New
Mexico.

MR. RUSSELL: John F. Russell, appearing for the appli-
cant. I have one witness, Mr. Miller.

MR. UTZ: Are there other appearances in this case?

(Witness sworn.)

MR. UTZ: You may proceed, Mr. Russell.

RAYMOND MILLER

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



follows:

DIRECT EXAMINATION

BY MR. RUSSELL:

Q Will you state your name, address and name and address of your employer?

A Raymond Miller, Artesia, New Mexico. My employer is General American Oil Company of Texas.

Q In what capacity are you employed and for how long have you been employed in that capacity?

A New Mexico District Engineer for eight years.

Q Have you previously qualified to testify as an expert by this Commission?

A I have.

Q Are you familiar with the application of General Oil Company of Texas in Case 2755?

A I am.

Q Will you state the sections and the formations and the pool in which you seek to initiate this waterflood project?

A It is portions of Sections 11, 12, 13 and all of Section 14, Township 16 South, Range 29 East, NMPM. It's the High Lonesome Pool.

Q What formation?

A It's Penrose sand of the Queen formation.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691

Q Is the applicant the owner and operator of the working interest of the leases covering these sections and the formation?

A They are.

Q At what interval do you propose to inject water for the secondary recovery of oil?

A The top of the sand in the highest well is 1990 and the base of the sand in the lowest well is 2140.

Q What type of waterflood project do you propose to initiate?

A We intend to initiate a peripheral waterflood.

(Whereupon, Applicant's Exhibit No. 1 was marked for identification.)

Q Referring to what has been marked as Exhibit No. 1, will you explain what that exhibit shows?

A It is a plat of a portion of Township 16 South, Range 29 East and 30 East. It shows the location of General American's property in the High Lonesome Pool. It depicts the wells that are producing there and the lessees within two miles of the proposed injection wells and the formations from which all wells produce.

(Whereupon, Applicant's Exhibit No. 2 was marked for identification.)



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6691

Q Referring to what has been marked as Exhibit 2, will you please explain what that exhibit shows?

A It shows our proposed flood plan and depicts the injection wells, the wells we propose to convert to injection in various stages and each well that will be converted in Stage 1, 2 or 3 is identified by a symbol.

Q There's a different symbol for each well in each stage of your project?

A Yes.

(Whereupon, Applicant's Exhibit No. 3 was marked for identification.)

Q Referring to what has been marked as Exhibit No. 3, is that the well logs covering the three proposed injection wells for Stage A, Stage 1, rather?

A That's correct.

Q What information is shown on these logs?

A It identifies the well by leases, name, well number, section, township and range and location within the section. It shows the oil or gas sands or zones, important water sands, the casing record, mudding and cementing record, the initial production, any well stimulation and the formations encountered during drilling of the well.

Q Now, all of the well logs which will be offered into



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6691

evidence contains that same information, do they not?

A That is correct.

Q Mr. Examiner, for the purpose of saving time we have some twenty-three wells, all of which are identified in our application by a stage in which they will be put on and it gives the name and location of each of the wells. I would like to include the application in the record to avoid the repetition of describing every well.

MR. UTZ: That will be satisfactory.

Q Now, that first exhibit contains, not the first exhibit, but Exhibit No. 3 contains three separate well logs, does it not?

A That's correct.

Q Which is the three wells you propose to use in the Stage 1?

A Yes, sir.

Q Assuming that Stage 1 of your proposed flood is successful, do you have any opinion of how long it might be before you would go into Stage 2?

A Oh, I should say somewhere in the neighborhood of ninety days after commencement of injection.

(Whereupon, Applicant's Exhibit No. 4 was marked for identification.)

Q Referring to Exhibit No. 4, is that the logs of the



wells covering the proposed five injection wells to be included in Stage No. 2?

A It is.

Q Assuming the Stage No. 2 is successful, do you have any opinion as to how long it would be after the commencement of Stage 2 that you would move into Stage 3?

A Oh, not more than six months to a year anyway.

(Whereupon, Applicant's Exhibit No. 5 was marked for identification.)

Q Referring to what has been marked as Exhibit 5, does that exhibit contain the logs of the eight proposed injection wells to be added in Stage No. 3?

A It does.

Q Now, the sixteen wells which have been covered by these three exhibits are all shown on Exhibit No. 2 with a different designation for the wells in each stage, is that correct?

A That's correct.

Q When you have completed Stage 2 of the peripheral flood, do you feel at this time that the information and results of the flood may cause you to change your mind and go over to a pattern flood?

A Well, we naturally hope to stay with the peripheral

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691



DEARNLEY-MEIER REPORTING SERVICE, Inc.FARMINGTON, N. M.
PHONE 325-1182SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6691

flood. I believe that this would be the proper method of approach, but if information we receive during the first two stages indicate that we should abandon the peripheral flood and go to a pattern flood, why we will at that time.

Q And you have prepared plans accordingly?

A We have, yes, sir.

(Whereupon, Applicant's Exhibit No. 6 was marked for identification.)

Q Referring to what has been marked as Exhibit 6, will you explain that exhibit?

A It's a plat depicting our flood plan No. 2, our pattern plan, which is essentially 80-acre five-spot pattern and if at the end of Stage 2 in the peripheral flood the early history in the flood so indicates that we can more properly flood this area with a pattern flood, we will abandon our peripheral plan and adopt this pattern flood.

Q When you say you will abandon the peripheral flood, you are referring to Stage 3, are you not?

A Yes, sir. The wells for Stage 1 and Stage 2 are common to both the flood plan No. 1 and flood plan No. 2, the peripheral and pattern flood.

(Whereupon, Applicant's Exhibit No. 7 was marked for identification.)



DEARNLEY-MEIER REPORTING SERVICE, Inc.FARMINGTON, N. M.
PHONE 325.1182SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6691

Q Referring to what has been marked as Exhibit No. 7, does that contain the logs of the proposed seven injection wells for Stage 3 of your flood project if you change from the peripheral flood to the pattern flood?

A It does.

Q Will the pattern flood then include the three wells covered by our Exhibit No. 3, which was Stage 1, and the five wells covered by Exhibit 4 which was the Stage 2 of the peripheral flood?

A Yes.

Q Exhibit 6 show all fifteen wells to be included in the pattern flood with a different symbol for each stage?

A It does.

Q Will you please explain your plan of injecting water into these various wells included in the proposed flood project?

A We propose, of course, to pull the present string of tubing, clean wells out to total depth and run plastic coated, internally plastic coated tubing, with a Hookwall packer and hydraulic anchor. The bottom of the tubing will be set within fifty feet of the bottom of the production string of casing in each well.

Q In your opinion will there be any commingling of any of the waters which were found in any of the formations which



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6691

these wells were initially drilled?

A No, sir.

Q Will you explain the reason for that?

A Well, in drilling of these wells the only or the major water encountered is in the red sand in the upper member of the Queen formation and in each case the production string of casing was cemented with enough cement to come from the hundred to two hundred feet above that red sand water. The only other water that occurred in these wells is in minor amounts above the salt section and it has either been cemented or mudded off in each case.

Q How many producing oil wells are located on the two leases to be covered by this proposed waterflood project?

A There are thirty.

Q Are these wells presently in the stripper stage?

A They are all marginal and stripper stage.

Q What is the average production of oil per day for these wells?

A For January, 1963 it was slightly less than ten barrels per well per day.

Q Have you initiated cooperative lease line agreements with all operators which have producing wells offsetting your proposed flood?



DEARNLEY-MEIER REPORTING SERVICE, Inc.FARMINGTON, N. M.
PHONE 325-1182SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6691

A The only operator who has producing wells offsetting us is International Oil and Gas Corporation. We have verbally agreed on a lease line cooperative plan. It is now being drafted and will be executed in the near future.

Q You have reached agreement as to the agreement itself, but it hasn't been physically executed, is that correct?

A That is correct. They are going to convert in our first, when we convert our first stage wells they are going to convert their No. 4, which is located in the Southeast, Southeast of Section 15, and subsequently they will convert other wells, another well, No. 3 McAllister, which is in the Northeast, Northeast of Section 15. Essentially the plan is that each company will have two producers and two injection wells on the common lease line.

Q Have you received verbal approval from the United States Geological Survey as to the proposed plan?

A Yes, they have approved the entire plan and are withholding written approval on it until such time as we file this lease line agreement between General American and International Oil and Gas.

Q In your opinion will the granting of this application result in a maximum recovery of oil from the leases and prevent waste and protect correlative rights?



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243-6691

A Yes, sir.

Q Where will you obtain the water for this flood?

A We intend to purchase it from Caprock Water Company.

Q At what rate do you anticipate that the water will be injected?

A Well, during fillup why we probably will be from three to six hundred barrels per well per day. Of course, after we receive response, why injection volumes will be regulated by proration of the producing wells.

Q Will this water be injected under pressure, and if so, what do you anticipate that the injection pressure will be?

A It will be under pressure and, oh, I imagine somewhere in the neighborhood of a thousand pounds, but we will probably design for 1500 in our system.

Q If this application is approved, do you request that the Commission set the allowable on the basis of Rule 701?

A We do.

Q Do you further request that this application be approved for the peripheral flood and that the Commission retain jurisdiction of this case for the purpose of giving administrative approval to the change from the peripheral flood to the pattern flood after the completion of Stage 2 if the experience at that time determines it is more feasible to go to the pattern



flood?

A We so request, yes, sir.

MR. RUSSELL: Mr. Examiner, I offer into evidence Exhibits 1 through 7.

MR. UTZ: Without objection, Exhibits 1 through 7 will be entered into the record.

(Whereupon, Applicant's Exhibits 1 through 7 were admitted in evidence.)

MR. RUSSELL: I have no further questions of the witness.

MR. UTZ: Are there questions of the witness?

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Miller, what is the range of production on the wells in this unit?

A One well makes 31 barrels of oil per day and I think our smallest well is slightly less than one barrel per day.

Q Who did you say owned the flood to the west?

A It's International Oil and Gas Corporation. That was formerly Western Development Company.

Q Is that flood operating under Rule 701?

A Now the flood that you have reference to is the General Western on further west. The International, it's my

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325.1182SANTA FE, N. M.
PHONE 983-3971ALBUQUERQUE, N. M.
PHONE 243.6691

understanding that they have either already filed or are in the process of filing an application to convert their McAllister No. 4 to an injection well, but they have received no flood program yet. The General Western flood to the west, I believe, is the capacity type flood, but the entire property only makes about 100 barrels of oil per day so it's not a problem.

Q Do you intend to make any pressure tests on the casing of your injection wells?

A Well, of course, most of these wells were fractured during completing and they withstood pressure at that time. We propose to run this string of tubing with a packer and hydraulic anchor and I don't believe, of course, we will pressure test it that way, but I think that any pressure tests of the casing as such are unnecessary in this case.

Q You are going to inject water through tubing in all cases?

A Yes, sir, internally plastic coated.

Q Five percent at the bottom of the tubing?

A Within fifty feet of the bottom of the production string, yes, sir.

Q Are all these open hole completions?

A They are. The casing is set immediately above the Penrose sand in dolomitic stringer that's right above the sand.



