BEFORE THE SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATE MENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico May 24, 1967 EXAMINER HEARING 1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO IN THE MATTER OF: Application of Anadarko Production CASE NUMBER Company for a waterflood expansion, 3591 ) dearnley-meier reporting Lea County, New Mexico **BEFORE:** ELVIS A. UTZ, Examiner TRANSCRIPT OF HEARING

MR. UTZ: Case 3591.

MR. HATCH: Case 3591, Application of Anadarko Production Company for a waterflood expansion, Lea County, New Mexico.

MR. GUINAN: If the Commission please, my name is T. J. Guinan, G-u-i-n-a-n. I am a staff attorney with Anadarko Production Company, the applicant herein, and for the purposes of this Hearing, the New Mexico law firm of Hinkle, Bondurant and Christy of Roswell, New Mexico has been associated. I have one witness, Clarence Stumhoffer.

(Witness sworn.)

## CLARENCE STUMHOFFER

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

DIRECT EXAMINATION

## BY MR. GUINAN:

Q Would you please state your name?

My name is Clarence W. Stumhoffer, S-t-u-m-h-o-f-f-e-r A

Q Would you please state your employer and your

position, please?

Α I am secondary recovery superintendent for Anadarko Production Company in Fort Worth, Texas.

Q Have you previously qualified to testify before this Commission in an expert capacity and have those qualifications

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been accepted?

A Yes, sir, I have.

MR. GUINAN: If there is no objection, I would like to move that Mr. Stumhoffer's qualifications be accepted.

MR. UTZ: He is qualified.

Q (By Mr. Guinan) Are you familiar with the application in this Case 3591?

A Yes, sir, I am.

Q Would you briefly summarize, very briefly, what this entails?

A In this application of Anadarko as operator of the Langlie-Mattix Penrose San Unit seeks approval to expand and complete waterflood development on this unit.

In this plan, we seek to complete development of this project in three stages, the first stage to be initiated upon approval by the Commission, the second and third stages to be initiated at Twelve-month intervals after this initial stage. The dates would be July 1st, 1968 and July 1st, 1969.

Q In other words, the initiation of the second stage would be on or about July 1, 1968 and the initiation of the third stage would be on or about July 1, 1969?

A That's right. That is assuming initiation of this first stage by July 1 of 1967.

Q Has this subject Langlie-Mattix Penrose Sand

Waterflood Unit previously been authorized by this Commission?
A Yes, it has. The unit agreement was approved by Order
Number R-2671 -- 2617, excuse me.

Q And the waterflood aspect?

A It was approved under Order Number 2633.

MR. GUINAN: If I may go off the record here for a minute.

(Whereupon, an off the record discussion was held.)
(Whereupon, Applicant's Exhibits A through F were
marked for identification.)

Q (By Mr. Guinan) I would like to refer your attention to what has been marked as Exhibit A for identification purposes and ask you to just briefly identify that for the record, please.

A Exhibit A is a County map of Lea County, New Mexico, showing that portion of the Langlie-Mattix field in which the Langlie-Mattix Penrose Sand Unit is located.

Q Was this exhibit prepared under your direction?

A Yes, sir, it was.

Q Would you briefly discuss it, please?

A The yellow outlined, the area outlined in yellow is the Langlie-Mattix Penrose Sand Unit area. The injection wells shown in black are the existing injection wells and the injection wells in red will be the wells converted or drilled

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Q Now, the yellow outline delineates the limits of your unit, is that correct?

A That's right.

Q And these proposed red injection wells outside that unit, would you briefly explain those?

A Those wells will be converted to injection as part of a co-operative line agreement between Skelly Oil Company, operator of the Penrose A and B Units to the south of the Langlie-Mattix Unit and those -- that's right, that is all of the red ones. The other Humble to the west of the unit has their well on injection.

Q And these two will be co-operative line agreement injection wells?

A That is right.

Q I would like to turn your attention, if I might, to the application, Paragraph Number 3, and ask you whether or not these are the wells which are proposed in the first stage to be converted to injection wells?

A Yes, they are. They will all be conversions except 24-4, which will be a new well drilled at an unorthodox location.

Q Now, Well Number 24-4, that is the one appearing approximately seven lines down in the tabulation, is that

correct? Α That is correct. Then all will be converted from producing wells to Q injection wells except 24-4, which will be necessary to drill--A That's right. Q -- as an injection well? That is correct. Α I would like to refer you to Exhibit B, attached to Q the application, and ask you to identify that, if you will. This Exhibit B is a Commission C-116 gas-oil ratio A test report. Was this filled out or prepared under your direction? Q Α Yes, it was. Would you briefly discuss it, please? Q Exhibit B presents all wells outside of the presently А developed waterflood area that have responded to water This was presented to obtain administrative injection. approval to convert eight of the sixteen wells presented in this application. Q Then if we would go back to the before mentioned paragraph 3, to the delineation of these wells to be converted, there are eight which qualify under this Commission's Rule 701 to be administratively approved as injection wells by reason

of response experienced around, directly offsetting or

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A That is correct.

Q Would you tell me, please, what is the approximate depth below the surface of this Penrose Sand common source of supply?

A Approximately 3550 feet from the surface.

Q Directing your attention to that marked Exhibit C, attached to the application, would you briefly identify that for the record, please?

A This is a schematic diagram of a typical well that will be converted to water injection.

Q Was this exhibit prepared under your direction?

A Yes, it was.

Q Would you discuss it, please?

A In this exhibit, we have shown a typical well to be converted to injection, showing the casing seat, the estimated top of the cement and the approximate packer seat which will be set in the lower portion of the casing and we have also shown a gamma ray neutron caliper log on this schematic to reflect the formation encountered in the well.

Q And that has, by that log, delineated the Penrose Sand down to a depth of, well, there is a shell break at approximately 3530 or thereabouts, is that correct? A The entire, or the Penrose Sand section in this

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Q Then you intend to set a packer and tubing within the casing and inject through tubing, is that correct?

A That is correct.

Q Then you will not be injecting down through the annulus between the casing and tubing?

A We will not. The tubing will be cement lined and set on a packer.

Q Directing your attention, if I might, to an exhibit, that designated as Exhibit D, attached to this application, would you identify that, please?

A Exhibit D is a summary of the well completion history of the wells to be converted to injection in stage one.

Q These are presently producing wells?

A These are presently producing wells.

Q Was this prepared under your direction?

A Yes, it was.

Q Would you just very briefly, I think it is almost self-explanatory, but would you just very briefly discuss it?

A In column one we have given the tract number and the well number. Column two, the date of initial completion. The next column consists of three columns, which gives a surface

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Q If I may, I would like to refer you to that marked Exhibit E -- let me go off the record, if I might.

> (Whereupon, an off the record discussion was held.) MR. GUINAN: Back on the record.

Q (By Mr. Guinan) I would like to direct your attention to that marked as Exhibit E for identification purposes, and ask you to identify that, please.

A These are Commission's Forms C-101 and C-102 in which we have filed application to drill Well Number 24-4 at an unorthodox location.

Q Were these two forms, constituting Exhibit E, prepared under your direction?

A Yes, they were.

Q Why do you ask this Commission to permit you to drill an injection well at an unorthodox location?

A In the original development of the field, the producing wells were not drilled on the standard 40-acre location and as a result, to properly sweep the reservoir, the most logical place would be to locate the injection well an equal distance from all producing wells offsetting it, and this

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Q In your opinion, state whether or not the permitting of this well at an unorthodox location will give you a more efficient sweep and thereby prevent waste?

A Yes, it will.

Q Tell me what medium you will use for injection purposes?

A We plan to use nonpotable water to be purchased from Skelly from their Jal water system.

Q How is that spelled?

A J-a-1.

Q And what are the projected, estimated injection rates per well per day, how many barrels of water?

A Approximately 500 barrels per day.

Q And what is your projected maximum well head pressure?

A Approximately 2,000 pounds, 2,000 P.S.I.

Q Have you received response anywhere within this unit from shutting the water?

A Yes, we have.

Q If you would please, for the purpose of the record, would you delineate those wells for which you seek administrative approval to convert to injection wells because

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A These wells are reflected in Exhibit F -- we haven't covered Exhibit F.

Q Well, I could direct you to Paragraph Number 4 of the application.

A Okay. The wells that we are requesting administrative approval to convert to injection, or drill as water injection wells, are Number 13C5, 13C7, 18-2, 19-4, 22-1, 24-4, which is the well to be drilled, 33-1 and 35-3.

Q I would like to direct your attention to that marked Exhibit F for identification purposes, that attached to the application, and ask you to identify that, please.

A Exhibit F is a detailed map of the Langlie-Mattix Penrose Sand Unit.

Q Was this prepared under your direction?

A Yes, it was.

Q Would you explain it?

A In this Exhibit F, we present the three stages of waterflood development that we propose. The wells that are indicated in orange will be, will compose the first stage and will consist of a total of sixteen wells.

The stage indicated in blue, which will be initiated on or about July 1st, '68, will consist of twelve injection wells. The third stage which will be initiated on or about July 1st, 1969, will consist of nine injection wells.

Q And that is shown in red?

A In red.

Q And the second stage in blue and the first in orange as you stated, I believe?

A Yes. And we have indicated the present injection wells in black.

Q As to your proposed future stages two and three, by what means do you plan to bring about water injection wells, by conversion of producing wells or by drilling or how?

A In stages two and three, we will convert present producing wells to injection except in the case of two wells which will be drilled.

Q If this unit is permitted to be expanded and to complete development, what number of injection wells as you now see it, will be necessary?

A At the present time, we have ten active injection wells and we propose to convert 37 additional wells or drill or convert 37 additional wells so we will have a total of 47 injection wells in the unit area when, at complete development.

Q What is the estimated life of this unit under secondary recovery?

A Approximately ten years.

Q You have before mentioned your directly offsetting

waterflood operators, both Humble Oil Refining and Skelly Oil Company. State whether or not they support or oppose you in this application.

A They have indicated support of this application, Skelly by letter and Humble by wire. I think the Commission has copy of the Skelly letter.

MR. HATCH: A letter from Skelly, yes.

Q (By Mr. Guinan) In your opinion, would the granting of this application promote conservation of oil and gas, protect correlative rights and prevent waste?

A Yes, I do.

MR. GUINAN: If there is no objection, I would like to move that Exhibits A through F be received in evidence and made a part of this record.

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

MR. GUINAN: That's all I have.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Stumhoffer, am I clear in what you are asking for here? You are asking for an expansion of seven wells, I believe it was, wasn't it?

A No, sir. Eight.

Q Eight?

Q Eight more injection wells?

A By administrative approval, is this what you are talking about?

Q Yes. I want to know whether you want us to approve eight injection wells now as a result of this Hearing or by administrative approval.

A I think this, in the way the Hearing Notice was published, I think there is some confusion in my mind, also. We had intended, there will be a total of sixteen wells that we seek approval for at this time.

Q Yes.

A Eight administratively and eight by Hearing. These sixteen wells consist of our proposed first stage of development.

	Q	You now have ten wells in this project as it is now?
	A	That's right.
	Q	Ten injection wells?
	А	Yes, sir.
	Q	You want to expand it by July of '67 by sixteen wells?
	А	Yes, I do.
	Q	Sixteen wells.
	А	Now, the eight wells to the west and south which are,
I	will	give you the numbers of those wells, they are Langlie-

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THE WITNESS: Yes, all of the offsets were sent notices of this Hearing.

MR. HATCH: Well, they were sent notices of the Hearing.

THE WITNESS: Yes.

MR. HATCH: But were they sent notices of your application for these particular wells for administrative approval?

MR. GUINAN: This application incorporates all of the wells and they were mailed, there is a certificate of mailing on this application. They were mailed to offsetters, but in this application we ask for both, for both in this first stage, either sixteen by this Hearing or eight by this Hearing with an additional eight administratively.

MR. UTZ: But you sent a copy of this application to all of your offsets of the additional eight wells?

THE WITNESS: Yes.

MR. UTZ: When did you do this?

MR. GUINAN: The certificate was mailed out May 3. It was mailed out at the time the application was mailed to the Commission and that was the complete application along with all the exhibits.

THE WITNESS: I think where the confusion is, we

incorporated all of these sixteen wells into one application and requested that eight be approved administratively.

MR. UTZ: I think that is probably it, all right.

THE WITNESS: And the other eight by Hearing.

MR. UTZ: If you would have asked for administrative approval for eight wells and asked for Hearing for another eight we would probably set it up, wouldn't we, for the eight wells? Does this constitute notice of the offsets?

MR. HATCH: I think we could probably say that this was notice as far as administratively on these eight. I would like to reserve judgment on that, though, for a period.

MR. UTZ: They would have to have some proof of response, though, wouldn't they?

THE WITNESS: We have got it in Exhibit D -- Exhibit B, rather. That is Form Cll6.

MR. GUINAN: Yes, this Form Cll6 is what is called for to be sent to the Commission on the response for administrative approval. It was incorporated in this application which was sent to the other parties.

MR. UTZ: Well, I assume that would do it. Now, the next step is to figure out which of these you want by administrative approval and which you want by the Hearing.

MR. GUINAN: All right. That is set out in Paragraph 4 of the application. They separate the sixteen into two groups of eight.

MR. UTZ: All right. Now, this would constitute your sixteen wells for your first stage.

MR. GUINAN: Yes, sir.

MR. UTZ: Now, how about your second and third stage?

MR. GUINAN: The second stage, we propose to initiate on or about July 1, 1968 and the wells that that would encompass in the area are shown on Exhibit F, differentiated by color, the three stages.

MR. UTZ: But you don't know which wells those are at the present time?

THE WITNESS: We have proposed these wells, these wells that are indicated on Exhibit F will be the wells we plan at the present time to utilize as injection wells. We did not present this, the exact wells, in the application because of certain areas that we will probably have some changes in and all we are asking in this application is that the Commission consider approval of the staging of this development and seeking, where we will seek administrative approval as to the exact wells at the time of the stage.

MR. UTZ: Off the record.

(Whereupon, an off the record discussion was held.) MR. UTZ: Back on the record.

MR. GUINAN: May I ask him just one question?

MR. UTZ: Yes.

## **REDIRECT EXAMINATION**

BY MR. GUINAN:

Q As to your proposed expansion into stages two and three as shown on Exhibit F, do you seek administrative approval as to the conversion of wells, to injection wells and the continued operation of this unit to completion?

A Yes, we do.

MR. GUINAN: That's all I have.

RECROSS EXAMINATION

BY MR. UTZ:

Q Now, is this whole area unitized?

A Yes, it is.

Q I didn't realize that this cross-hatched outline here is the unit area.

A Yes, it is. The unit was approved by Order Number 2617, the date of the Hearing was December the, during December of 1963. I don't remember just the exact date.

MR. GUINAN: December 4, I believe.

MR. UTZ: Are there any other questions of the witness? He may be excused.

(Witness excused.)

MR. UTZ: Statements in this case?

MR. HATCH: I have a letter from Skelly Oil Company

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ALBUQUERQUE, NEW MEXICO 87108 dated May the 10th, 1967, addressed to the Oil Commission. "On May the 24th, 1967, the Oil Conservation Commission will hear the application of Anadarko Production Company for authority to expand and complete the waterflood development of the Langlie-Mattix Penrose Sand Unit located in Township 22 South, Range 37 East, Lea County, New Mexico. This is to advise that Skelly Oil Company not only as an interested party in the unit but also an interested operator of the offset acreage, supports the application of Anadarko and urges the Commission to grant the relief requested." Signed George Seelinger.

MR. UTZ: Any other statements? Exhibits A through F will be accepted into the record of this case.

MR. GUINAN: This is a copy of a wire from Humble, the other offsetter.

MR. UTZ: The case will be taken under advisement and the Hearing is adjourned.

(Whereupon, the Hearing was concluded.)

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NOTARY PUBLIC

STATE OF NEW MEXIC	:0)
	) ss
COUNTY OF BERNALII	LO)

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.

My Commission Expires:

July 10, 1970

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