

this case.

MR. NUTTER: You also have Case No. 3064, which is an extension of a Waterflood Project in the same area as covered by the Unit. Is there any possibility you might want to consolidate these cases for the purpose of hearing?

MR. WATSON: That will be satisfactory.

MR. NUTTER: We will also call Case No. 3064.

MR. DURRETT: Application of R. C. Davoust Company for a Waterflood Expansion, Eddy County, New Mexico.

MR. NUTTER: Case No. 3063 and Case No. 3064 will be consolidated for purposes of testimony.

MR. WATSON: I also represent Mr. R. C. Davoust. Mr. William E. Fickert, Petroleum Engineer with Ryder Scott Company Midland and Wichita Falls, Texas will be a witness for the Applicant.

MR. DURRETT: Would you stand and be sworn, please?

(Witness sworn.)

MR. WATSON: Mr. Fickert has testified before the Commission before. I wonder if his qualifications may be accepted?

MR. NUTTER: Yes, sir, they are, proceed.

DIRECT EXAMINATION

BY MR. WATSON:

Q Mr. Fickert, you are employed by R. C. Davoust Company



as a Petroleum Engineer on the Turkey Track Waterflood Project in Eddy County, New Mexico?

A Yes, sir.

Q You have been so employed for a period of time?

A Yes, sir.

Q Approximately how long, sir?

A Since January of 1961.

Q Now, with reference to the Application under Case No. 3063, the Application for formation of a Turkey Track Unit No. 3, I hand you what has been marked Exhibit 1. I will ask you to describe that Exhibit, please.

A Shown colored in yellow is the proposed unitized area for the Turkey Track Section 3 Unit.

Q Does it also show the wells surrounding it in the area?

A It shows other area wells, yes, sir. This is a recent county map.

Q All right, sir. I hand you what has been marked Exhibit 2 in Case 3063, and I will ask you to please state what that depicts, sir.

A This is the Exhibit B, and is the actual Exhibit B for the Unit Agreement, and it shows the proposed unitized area in Section 3.

Q Does it show the various classifications of wells?



A It shows injection wells, producing wells, and one abandoned well.

Q I hand you what has been marked Exhibit No. 3 in Case 3063 and I will ask you to describe that Exhibit, please, sir?

A Exhibit 3 is the oil production statistics showing cumulative production from the Queen-Grayburg and from the Seven Rivers through 1957, and then the yearly production figure for 1958 through 1963, and cumulative for all of the zones involved.

Q This is your cumulative production statistics?

A Yes.

Q I will hand you what has been marked Exhibit 4 in Case No. 3063, and ask you to describe that Exhibit.

A Exhibit 4 is the summary of tract participation as determined in Unit Participation. It shows the expected reserves at one-one-sixty four (1-1-64) for each well in the Unit Area; and then it shows the percentage of the total Unit each well will receive in the Unit Agreement.

Q Was this prepared for the purpose of arriving at the proposed participation factors?

A Yes, sir.

Q I will hand you what has been marked Exhibit 5 and ask you to just describe Exhibit 5.

A Exhibit 5 is the Unit Agreement. It also includes



Exhibit "A" which is a tabulation of well participation in the Unit and Exhibit "B", which has been used previously, shows the outline of the Unit Area.

Q Now, is there more than one participation factor for some of the tracts within a Unit?

A Some of the tracts have Grayburg production, some tracts have Grayburg-Queen, and some tracts have only Queen, so, we have participations of each Queen and Grayburg, for each tract.

Q In other words, this is to be a dual flood under this?

A Yes.

Q As to certain of the tracts, did you, yourself, work out the participations factors in this?

A Yes, sir.

MR. WATSON: By way of explanation of this procedure, we only received the completed Unit Agreement yesterday, and we have filed it with the Commissioner's Office with the understanding that we would make any corrections which are necessary as to form or content. At this time, we do wish to go on with this Hearing. The Unit Agreement which we have submitted has been signed by R. C. Davoust.

Q R. C. Davoust is the working interest owner of all of the rights which we intend to unitize?

A Yes, sir.



Q The state is the owner of all royalty interests and all mineral interests.

MR. WATSON: We are meeting tomorrow with the lease owners of record whom we believe will sign the Unit Agreement. We are also meeting tomorrow with the over-riding royalty interest owners, who we believe will sign the Unit, and we understand, of course, that until we show participation in full it will not become effective.

MR. NUTTER: But you are offering this copy of the Unit Agreement as a copy of the agreement which was submitted to the Commissioner of Public Land and which has not been signed by the royalty owners and the over-riding owners; is that correct?

A That's correct.

MR. WATSON: That's correct.

MR. NUTTER: And you are agreeing that this Unit Agreement will be amended as required by the Commissioners of Public Land?

MR. WATSON: Yes, sir, we are.

MR. NUTTER: Okay.

Q (By Mr. Watson) Now then, Mr. Fickert, you worked out the participation factors on this unit and you worked out the area to be unitized; is that correct?

A Yes, sir.



Q As a matter of fact, this Unit is proposed to be formed so that the Queen and the Grayburg, if the Grayburg is authorized to be flooded, maybe affected differently, flooded together; is that correct?

A That's true.

Q One of the primary purposes of this Unit is so that the oil may be commingled in order to eliminate tank batteries?

A Well, several of these wells have tank batteries. We have thirteen wells and we have eight tank batteries, and for ease of operation and for later when we have water production we will be able to handle the separation and treating problems all at one battery rather than eight different batteries.

Q Which should result in economic operation?

A Yes, sir.

Q Have you plotted your Grayburg pool as it underlies this unit?

A In our next Hearing, I have; yes, sir.

Q All right.

A I have shown that.

MR. WATSON: The subsequent Case 3064 is, of course, the Application for the Grayburg, and if the Examiner prefers, we will just put them all on and call for cross examination of the witness.

MR. NUTTER: Go ahead with your extension of the water



the Grayburg reservoir and which we are asking for our flood to cover.

Q Does it show wells in the surrounding area, also?

A Yes, sir.

Q It is an area map?

A Yes, sir.

Q And I hand you Exhibit 2 and ask you to state what that Exhibit depicts?

A Exhibit 2 is a large scale drawing essentially of the county map, and colored in green is the area which is now producing Grayburg oil which we believe will be flooded.

Q Are the Grayburg wells shown?

A Yes, sir, the Grayburg producers are shown as such.

Q This also shows the Queen wells?

A Yes, sir.

Q And the injection wells?

A It shows the injection wells we have drilled.

Q Have drilled?

A But have not completed as such; that were drilled from permission granted in another Hearing.

Q Exhibit 3, would you describe Exhibit 3, please, sir?

A Exhibit 3 shows Grayburg production from the four producing wells in the Grayburg.

Q Would you give the numbers of those wells?



Q One lease is the Spencer Three, Five, and Six; and the other lease is the State Two. It shows the cumulative production through 1957, and it shows yearly production through 1963.

Q Insofar as the Grayburg production depicted on Exhibit 3, is it in your opinion approaching the economic limits?

A Yes, sir.

Q So that flooding would be feasible?

A Flooding is feasible, right.

Q Would you look at Exhibit 4, please, sir?

A It is a graphical representation of the data as shown in Exhibit 3, except it is on a monthly basis.

Q And I hand you Exhibit 5 in Case 3064, and I will ask you what that is, please, sir?

A Exhibit 5 shows the intended flooded area for the Grayburg. It shows the five injection wells which we believe will sufficiently flood the Grayburg and it shows the Grayburg producers.

Q Does it show injection wells which will be used solely for injection in the Queen and Grayburg?

A Yes, sir, it does.

Q Did you, yourself, plot the area of the holes to be flooded on the Grayburg --

A Yes, sir.



Q -- which is shown in red?

A Yes, sir. We might add we are asking for injections into five wells, four of them will be dual injection wells. Brainard "3-W", Spencer 12-W, State 18-W, and Spencer 3-W will be dual injectors. The Spencer 3 will be dually completed. It is now a Grayburg producer, and the State 2 will be a Grayburg injector only.

Q Now, is it your opinion from plotting the extent of the Grayburg area to be flooded, that that's a fairly accurate depiction of the Grayburg as it underlies Section 34?

A The productive areas are probably slightly larger, but this is what we feel we can flood.

Q Practically flood?

A Practically, economically flood; yes, sir.

Q Would you briefly describe Exhibit No. 6, sir?

A Exhibit No. 6 is a most recent water analysis on the water we are now injecting in Section 34. In other words, we feel its representative of the water from our water supply.

Q Now then, I will hand you Exhibits 7, 8, 9, 10, and 11 which are all schematic diagrams of well completions, and I will ask you to go through them, well by well, giving the Well Number and the type of completion.

A Yes, sir. Exhibit 7 is a diagram of the Brainard "3-W". This is an injection well that has been recently drilled on the



as well as the pattern already established for the Queen?

A We believe so, yes, sir.

Q And it is economically feasible and will result in best recovery of oil with the protection of correlative rights?

A With unitization.

Q With unitization. Now, the Unit about which you testified in Case No. 3063 if that Unit should be approved and executed, this will give you the most effective manner in which to flood the Grayburg and the Queen within the area you propose to flood the Grayburg; is that correct?

A Yes, sir, we believe so.

MR. WATSON: That is the Applicant's case.

MR. NUTTER: Does anyone have any questions of the Witness?

MR. IRBY: Frank Irby from the State Engineer's Office. I have a statement to make, Mr. Examiner. The State Engineer objects to the granting of Application 3064, for failure of the Applicant to comply with Rule 701, which requires that the sketches referred to, I presume, the ones referred to in the testimony, be submitted to the State Engineer. We have not received anything other than Mr. Watson's letter to the Commission.

MR. WATSON: If the Examiner please, I would like to make a statement on this.

We were under the impression, incorrect I am sure, but we



were under the impression that perhaps we could, rather than unitize this communize this, and we had a great deal of difficulty in getting all of the data together. We are prepared to sit down with the State Engineer. We recognize that the State Engineer must have these diagrams; but --

A We have a set for him.

MR. WATSON: -- we have a set for him. We were in the State Engineer's Office this morning, and it came time to come up here before we could see you. I have your letter and I was proposing to bring these Exhibits to you.

MR. NUTTER: You have a set of Exhibits for the State Engineer.

A Unless he has seen these --

CROSS EXAMINATION

BY MR. NUTTER:

Q Now, how many of these well, have actually been authorized previously for these injections? I believe the Brainard "8-W" has, into the Queen?

A Into the Queen. The State "12-W".

Q It has been; and the "18-W"?

A Yes, sir.

Q How about the Spencer 3 and State 2?

A No, sir.

Q This is the first time?



A We are asking for that at the Hearing today.

MR. NUTTER: Mr. Irby, I believe that the casing, cementing program on it was submitted at an earlier hearing. The only difference in the injection now as compared to the previous case is that the well has been deepened below the Queen into the Grayburg formation. There has been no change in the cementing and casing program from the Queen on up, so I don't think this would affect the feasibility of using these wells as injection by deepening them to another horizon, insofar as pressure, water and casing are concerned. Now, the Spencer No. 3 and the State No. 2 on Exhibits 10 and 11 are new injection wells which are being heard for the first time.

A These could be conversions, and we feel like we have set up a program that is acceptable to the State Engineer; but the others, they are not new injection wells, they are to be converted.

MR. NUTTER: As far as being authorized for conversion, they have come up now for the first time.

A Correct.

MR. IRBY: Which of these Exhibits -- None of them are numbered, which is which?

MR. NUTTER: It's the last two Exhibits, if they are in proper order, Frank. They are the schematic diagrams of the wells completion programs. The Spencer No. 3 is Exhibit 10.



And that State No. 2 is Exhibit No. 11.

A Let me say this: That the first three wells, the Brainard "8-W" and the Spencer "12-W" and the State "18-W" have not been completed. We drilled through the Queen, set the pipe in the Grayburg and drilled into the Grayburg and then we plugged back to below the Queen, and that is the way the wells are standing right now. They have not been completed in either zone. The Grayburg is presently cemented off waiting on orders from this Hearing.

MR. NUTTER: Mr. Irby, would you withdraw your objection to the granting of the Application in this case if we were to continue the case until a later time of the day and give you a chance to study these Exhibits and discuss the matter with representatives of R. C. Davoust Company?

MR. IRBY: I don't know how much time I am going to need, Mr. Nutter. I don't have any objection to going ahead with the Hearing. I won't withdraw my objection to the granting of the Application until I feel I understand this Case.

MR. NUTTER: That is the purpose of my suggesting the continuance until later in the day.

MR. DURRETT: If you can't --

MR. NUTTER: It would give you a chance to study these wells.

MR. IRBY: What I am objecting to in your suggestion



of "later today", I may need more time than that. I have other commitments today, tomorrow, and part of Friday.

MR. NUTTER: I see. Well, we will proceed with further cross-examination at this time, then.

Q (By Mr. Nutter) Mr. Fickert, the five wells that we have here on Exhibits 7 through 11 are all of the wells that will be used in the Grayburg; is that correct?

A As far as we know. Now, if we decide on further injection wells we will either ask for a Hearing or the Commission's approval, but as of right now, we feel this will take care of us.

Q On your Exhibit No. 3 in Case No. 3064, you have an area colored in green with the legend showing that the wells there are Grayburg producers; is there any Queen production in this green area?

A Yes, the State 15, which is shown as the Queen producer, this is just around --

Q That is the only Queen well?

A In that area. Now, the Spencer 5, 6, and 3, we believe are Queen productive and we will try to flood both zones at the same time on those leases.

Q Now, one of those will be an injection well No. 3?

A Yes.

Q And you will open up the Queen formation of 5 and 3 as



producing zones?

A Yes, sir.

Q Now, do you plan to selectively inject -- that is, will there be any separation of the injection water into each of these two zones, or will it just run down the casing or tubing, as the case may be, and let it seek it's own formation?

A No. Initially, we will inject down the casing, and then we will run radio-active surveys and determine if we are giving the correct amounts into each zone; if not, we will set a tubing on a packer between these zones and selectively inject.

Q What about the two wells which are your initial injections being the Spencer 18-W and Spencer 3, how would you selectively inject there?

A Well, we have plans to either use the smaller tubing and then 2". We will come back and selectively inject into each but not down the casing in this case.

Q In no case would you go down the casing?

A In those two wells we wouldn't do that.

Q What is this packer set on these two wells. I notice that the Number 3 is at 2,130. What is the uppermost perforation in the Queen formation in that well?

A Well, we don't have those perforations yet but they will be perforated into the zones. The Spencer 3 will be somewhere between 2,146 and 2,188. We haven't exactly determined.



We don't have any information on those wells --

Q Do you have any idea how far up the hole that sixty-six sacks of cement on the 7" pipe came?

A Probably 150 to 155 feet. We will set it 100 feet off the --

Q So, it is your estimate that the packer will be set down into the area covered by cement on the No. 3 well?

A Yes, sir.

Q Referring to the State No. 2 well, it shows your packer would be set at 2,480 feet and that this 7" pipe was cemented with one hundred sacks. In your opinion, how far did the cement come up?

A We feel it has come up at least 100 feet.

Q This well hasn't been a Queen injector well, has it?

A No, sir.

Q So, actually, you will be going up to a little bit of an open hole interval there?

A Yes, sir.

Q Twenty-five to --

A Yes, sir; now that's correct. In other words, we don't feel like there will be any Queen to open in this well.

Q And the packer will be set in the area covered by cement?

A Yes, sir.



Q Is there any particular plan for tubing in these wells, will it be plastic?

A It will be plastic lined tubing, new.

Q I see. Now, on your participation summary you are familiar in Case No. 3063 you gave credit to certain of these facts for Queen Reserves as well as Grayburg Reserves. In what manner were those reserves computed, and the participation factors determined?

A The Queen reserves and the Grayburg reserves were determined essentially by cumulative production. In the area of the Spencer 3, 5, and 6, we have estimated the barrels per acre foot recovery which we estimate we will receive under the water flooding.

Q Now, these reserves on Exhibit No. 4 in Case 3063 are as of 1-1-64?

A Yes, sir.

Q These are not primary reserves, they are secondary recovery reserves?

A Yes, sir. In one case they are some remaining primary --

Q In one case?

A The Spencer No. 1, I believe, has the remaining primary.

Q I see.

A But, essentially, they are approaching the economic



limit and they did not have a primary reserve remaining.

Q How long has actual injection been going on in the Queen formation in this area?

A Since March of 1960.

Q And it has all been to the north of this area, up in --

A Thirty-four.

Q -- Thirty-four, hasn't it?

A Yes, sir.

Q This is the first venture down into Section 3 South?

A Yes, sir.

Q Have you had any preliminary indication from the office of the Commissioners of Public Lands as to what that offices opinion of this Unit Area and Unit Agreement is?

A We are prepared to sit down with the Commissioner's Office and describe what we are planning on doing. In other words, they have, as far as the Unit Agreement, I think, they have some suggestions and we will try to enlighten them on what the production might be in the future and how to determine these reserves.

Q And you are aware that any order that the Commission ever enters in a Unit Area Case in which state lands are involved does not become effective until the Unit Agreement has been approved by the Commissioners of Public Lands?

A That's true.



MR. WATSON: The Unit Agreement so provides.

MR. NUTTER: It provides that the order will not be so applied?

MR. WATSON: Yes, sir.

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

MR. DURRETT: I have a question.

CROSS EXAMINATION

BY MR. DURRETT:

Q I don't have copies of your Exhibits; have you furnished us with specific well locations for these wells? Are they any place in your Exhibits?

A Where they are located?

Q Footage locations.

A No, we haven't.

Q Would you please do that by letter or something?

A Yes, sir. We will take care of that by letter.

MR. DURRETT: That's all.

MR. NUTTER: Any further questions of Mr. Fickert? You may be excused.

MR. WATSON: If I may, for just a moment; I have not at this time offered the Exhibits in Case No. 3064.

REDIRECT EXAMINATION

BY MR. WATSON:



Q Mr. Fickert, were Exhibits 1 through 11 in Case No. 3064 prepared either by you or under your direct supervision?

A Yes, sir.

MR. WATSON: We move the introduction of Exhibits 1 through 11 in Case No. 3064.

MR. FICKERT: We would like to enter two other Exhibits which we won't go into, but might be of value to you.

REXCROSS EXAMINATION

BY MR. NUTTER:

Q Are those the logs of the "12-W"?

A Yes, sir.

Q That well was drilled after being authorized of the previous Hearing?

A Yes, sir.

MR. NUTTER: We would like to have those logs.

MR. WATSON: Do you have them marked for identification?

(Whereupon, Applicant's Exhibits No. 12 and 13 were marked for identification.)

MR. FRICKERT: Exhibit 12 is a sonic gamma ray log on State or Spencer "12-W".

MR. WATSON: Exhibit 13?

MR. FRICKERT: The exhibit is a movable oil plot on Spencer "12-W".



MR. WATSON: Okay. We move the introduction of Exhibits 1 through 13 inclusive in Case 3064.

MR. NUTTER: Applicant's Exhibits 1 through 13 in Case 3064 are admitted into evidence.

(Whereupon, Applicant's Exhibits 1 through 13 admitted into evidence.)

MR. NUTTER: Do you have anything further Mr. Watson?

MR. WATSON: No, sir.

MR. NUTTER: Does anyone have anything to offer in Case 3064?

MRS. REAH: I am Mrs. Reah of the State Land Office. Mr. Watson brought the Unit Agreements in this morning. We have not had the opportunity to examine it. We are going to do that and he has agreed to make any changes we should require. We are in favor of the Unit Agreement if certain requirements are met with Mr. Irby's office and with yours.

MR. NUTTER: Thank you, Mrs. Reah.

MR. WATSON: We have agreed to sit down and go over it and make such changes as are recommended.

MR. NUTTER: Inasmuch as the office of the Commissioner of Public Lands and the office of the State Engineer have not had an opportunity to study the Unit Agreement as well as the extension of the water flood into another formation, we are going to continue this case until July 1 and we hope that all



of these cases will be ironed out with all agencies and there will not be any necessity for any further discussion of the case. However, if everything hasn't been ironed out, we will recall the case and take further testimony or evidence on July 1st.

MR. WATSON: All right, sir, thank you.

MR. NUTTER: So, Case 3063 and Case 3064 are continued to July 1st at 9:00 o'clock A. M. But, as soon as I have had an opportunity to go over this, I want to prepare a letter to you and a copy to Mr. Watson.

If we have a letter from the Commissioner's Office and from the State Engineer's Office and they have a letter in their file, it won't even be necessary for them to come to the Hearing. If everything hasn't been ironed out, we will just start over again.



I N D E X

<u>WITNESS:</u>	<u>PAGE</u>
WILLIAM E. FICKERT	
Direct Examination by Mr. Watson	2
Cross Examination by Mr. Nutter	14
Cross Examination by Mr. Durrett	22
Redirect Examination by Mr. Watson	22
Recross Examination by Mr. Nutter	23

E X H I B I T S

<u>Number</u>	<u>Marked for Identification</u>	<u>Offered</u>	<u>Received</u>
(3063)			
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12	23	24	24
13	23	24	24



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

I, CHARLES WALKER, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 14th day of August, 1964.

Charles Floyd Walker
NOTARY PUBLIC

My Commission Expires:
March 25, 1968.

He hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3063-3064 heard by me on June 10, 1964.

[Signature], Examiner
New Mexico Oil Conservation Commission

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NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE JUNE 10, 1964 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Ray M. Selinger	Skelly	Dulsa
Richard D. Mercurio	Humbie	Durango, Colo.
John F. Russell	Newmont Oil Co.	Roswell, N.M.
Les A. Watson	R. C. Davoust Co.	Artesia, N.M.
William E. Fickert	"	Midland, Texas
Berry Hemmery	"	Evansville, Indiana
L. E. Thomas	Amerada	Hobbs
Orvall Schmidt	"	monument
Bill Kastle	Gulf	Roswell
DON BILBREY	GULF	ROSWELL
B. Boles	Gulf	Roswell
P. J. Mc Grath	U. S. G. S.	Farmington
Jason Kellahi	Kellahi & Fox	Santa Fe
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H. L. Carter	O C C	Santa Fe
William M. Griffith	Continental Oil Co.	Denver

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARINGSANTA FE, NEW MEXICOREGISTERHEARING DATE JUNE 10, 1964 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
<i>Fred Van Matre</i>	<i>Continental Oil Co</i>	<i>Durango, Colo.</i>
<i>H. E. Ellis</i>	<i>" " "</i>	<i>" "</i>
<i>Ed Voorhees</i>	<i>" " "</i>	<i>" "</i>
<i>Charles Chapman</i>	<i>Newmont Oil</i>	<i>Houston, Tex</i>
<i>Charlie Seely</i>	<i>" "</i>	<i>" "</i>
<i>Marshall Smith</i>	<i>R. W. Byram</i>	<i>Santa Fe</i>