STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF PHILLIPS PETROLEUM COMPANY

CASE NO. 10,854

JAN 14 1994

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

December 16, 1993

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, December 16, 1993, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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# I N D E X

December 16, 1993
Examiner Hearing
CASE NO. 10,854



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## E X H I B I T S

| | Identified | Admitted |
|---|---|---|
| Exhibit 17 | 7 | 13 |
| Exhibit 18 | 8 | 13 |
| Exhibit 19 | 8 | 13 |

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A P P E A R A N C E S

FOR THE DIVISION:

ROBERT G. STOVALL
Attorney at Law
Legal Counsel to the Division
State Land Office Building
Santa Fe, New Mexico 87504

FOR THE APPLICANT:

KELLAHIN & KELLAHIN
Attorneys at Law
By: W. THOMAS KELLAHIN
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P.O. Box 2265
Santa Fe, New Mexico 87504-2265

ALSO PRESENT:

JIM MORROW
OCD Chief Engineer/Hearing Examiner

* * *

WHEREUPON, the following proceedings were had at 9:58 a.m.:

EXAMINER STOGNER: Again, I'll introduce myself, Michael E. Stogner, Examiner for this case, 10,854.

MR. STOVALL: Application of Phillips Petroleum Company for a special oil allowable for the Cabin Lake-Delaware Pool, Eddy County, New Mexico.

This case is re-opened at the request of the Division.

EXAMINER STOGNER: I'll call for appearances at this time.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing on behalf of the Applicant, and I have one witness to be sworn.

EXAMINER STOGNER: Will the witness please stand to be sworn?

(Thereupon, the witness was sworn.)

EXAMINER STOGNER: Mr. Kellahin, would you briefly state what has elapsed between October 21st and now?

MR. KELLAHIN: Yes, Mr. Examiner.

EXAMINER STOGNER: A synopsis on the record.

MR. KELLAHIN: Yes, sir.

I asked Mr. Ken Schramko to return today. Mr.

Schramko is a reservoir engineer with Phillips. He was the original witness at the hearing conducted before you on October 21st.

I have taken the liberty to bring the transcript of that hearing, and here were the exhibits that we were dealing with in October.

EXAMINER STOGNER: And you've handed me a copy from our record of the transcript of the October 21st proceedings, and -- What did we have? About 15 exhibits admitted at that time?

MR. KELLAHIN: Including the certificate of mailing, made 16 at that time, Mr. Examiner.

EXAMINER STOGNER: Okay. Thank you, sir.

MR. KELLAHIN: Subsequent to the hearing, we have received two letters from you. One was dated November 3rd, the other November 19th.

The purpose of those letters was to ask us to provide for your information additional data with regards to the wells in the pool.

Mr. Schramko has done that and has returned today to authenticate those exhibits, to provide additional testimony for you, and to answer any questions you might have with regards to his Application or matters concerning the Cabin Lake-Delaware Pool.

He is prepared to submit three additional

exhibits. Those exhibits are marked 17, 18 and 19. The first two are tabulations, the last is an illustration by which he's identified the various types of wells involved.

With that introduction, Mr. Examiner, I'd like to direct my questions to Mr. Schramko.

EXAMINER STOGNER: You may proceed.

KEN SCHRAMKO,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Schramko, for the record, would you please state your name and occupation?

A. Yes, my name is Ken Schramko. I'm a reservoir engineer with Phillips Petroleum.

Q. Did you qualify as an expert reservoir engineer before the Division on October 21st when you provided testimony concerning the Application in this case?

A. Yes, I did.

Q. And do you continue to testify in that capacity on behalf of your company?

A. Yes.

Q. Pursuant to the direction of the Examiner, have you received copies of his letters and in accordance with those letters provided the supplemental information that

he's requested?

A. Yes.

MR. KELLAHIN: We tender Mr. Schramko as an expert witness.

EXAMINER STOGNER: Mr. Schramko is so qualified.

Q. (By Mr. Kellahin) Let me ask you, sir, to take Exhibit 17 and describe for us what you've done and what this exhibit contains.

A. The letter requesting more information of us is answered directly in Exhibit 17. It provides the well name for every well in the pool, the operator, the location, the drilling unit, section, township and range, the total depth, the perforated intervals, the current well status and the formation tops of the Cherry Canyon, the Brushy Canyon and the Bone Springs.

Q. That information is contained on two pages?

A. That's correct.

Q. And these are for all the wells that are in the pool?

A. That's correct.

Q. And what is that total well count?

A. Thirty-four wells.

Q. Let's turn now to Exhibit 17. What is that?

A. 18?

Q. I'm sorry, 18. What is that?

A. 18 is some additional information we thought might be useful. It basically reiterates the well name and the perforated intervals, but it also provides the dates that those perforated intervals were shot in each well.

Q. All right, sir. Let's turn to Exhibit 19 and have you identify and describe that display.

A. I felt as though a visual presentation of the various types of completions that we have at Cabin Lake might also be helpful.

On this diagram you can count that there are ten different wellbores displayed, and each of the 34 wells falls into one of these completions.

At the very top you will see a designation going across from left to right of one well, one well, 16 wells. That's intended to demonstrate how many wells in the pool are completed in the fashion shown by that wellbore.

This diagram also shows the tops of the various formations we've been discussing. They've been approximated -- since each well is unique. They've been approximated as the Cherry Canyon top at about 4500 feet, the Brushy Canyon top at 5800 feet, and the Bone Springs top at 7450 feet.

Q. All right. Let's go back and establish what you've done to locate the top of the Cherry Canyon, the top of the Brushy Canyon and the top of the Bone Springs.

You've reviewed the transcript from the past hearing?

A. That's correct.

Q. There was some question about the precise location of those members of the pool as we move through the wells.

A. That's correct.

Q. Have you gone back and validated what in your best estimate is the approximate footages for those various tops?

A. Yes, that information is shown specifically for each well in Exhibit 17. It's approximated on here --

Q. Okay.

A. -- in round numbers.

Q. We've all done lots of cases since October. Let's put in focus what it is that you saw to be the issue in this case. What was the issue?

A. From the beginning -- We are here to ask for the increased allowable and the elimination of overproduction.

Q. Yes, sir, and describe for us the depth bracket allowable that applies for the pool. It's 107 barrels a day?

A. Yes. The key item that is displayed on Exhibit 19 is that the discovery well in the field, which is the first well, or the well shown to the far left on that diagram, discovery well is the James A 2.

It was drilled to a depth of 6000 feet, and based upon the completion in that well, the field, the entire field was given -- or the pool was given an allowable of 107 barrels a day.

Q. When you deal with the gross pool limits, approximately how many vertical feet are we dealing with?

A. In the Delaware in its entirety, it would be about 3000 feet.

Q. Taking that interval, how many different depth bracket allowables do you have the potential to be involved in?

A. The potential is four, but we have not encountered pay to speak of above 5000 feet, which would bring it, practically speaking, to three.

Q. You said a while ago there are 34 wells in the pool?

A. That's correct.

Q. That were completed in the pool?

A. That's correct.

Q. How many of those were drilled to a total depth below 7000 feet?

A. All but two.

Q. One of those two being the discovery well?

A. That's right.

Q. At this point, can you approximate for us how

many wells are currently commingled, if you will, in the two members of the pool, the Cherry Canyon member, and the Brushy Canyon member?

A. Yes, 22 of the 34 wells have or will have commingled perforations in the Cherry Canyon and Brushy Canyon.

Q. Of the wells that are still producing in the pool, are there wells that have the capacity to produce in excess of the current depth bracket allowable of 107 barrels a day?

A. Yes, there are.

Q. Have you identified how many you think there are?

A. Yes.

Q. How many are there?

A. There are seven in the field, two of which are part of a waterflood and are not going to be impacted by the outcome of this hearing. Five of those seven would be impacted.

MR. KELLAHIN: Mr. Examiner, at the prior hearing you asked for a reference as to those waterflood wells. They are part of a pressure-maintenance project. The Order is Number R-9500, and here is a copy of the pressure-maintenance Order.

Q. (By Mr. Kellahin) You said in the prior hearing that you had made an extensive study on behalf of your

company of the various Delaware wells in New Mexico and had inventoried hundreds if not thousands of those wells.

How is your circumstance different or unusual as compared to the other Delaware pools?

A. In this vicinity of New Mexico, we find the Delaware to be a bit deeper. And as a result, you find a majority of the fields in this area have 187-barrel-a-day allowables, unlike some of the other areas where it tends to be a bit shallower and you'll find the allowables of 145 and 107.

Q. Do you see any opportunity for the violation of correlative rights or the causing of the waste of hydrocarbons if the Examiner should approve this Application?

A. No. Well, we of course went through that in greater detail in the original hearing.

Q. Anything occurred since your last testimony to cause you to change that opinion?

A. No. No, the other unique aspect leading back to your previous question, or something worth noting, is that of the 34 wells 27 of them were originally perforated below 7000 feet. Of the seven exceptions, six of those did not encounter pay below 7000 feet. Two are the shallow wells, and four of them were edge wells, and frankly were lucky to encounter any pay.

So really, essentially all of the wells in this field that were drilled deep enough to encounter it were completed at depths below 7000 feet.

Q. And up to now have been restricted, then, by a depth bracket allowable that was caused simply because the initial discovery well was not drilled to the deeper zone?

A. That's correct.

MR. KELLAHIN: That concludes my examination of Mr. Schramko.

We move the introduction of his Exhibits 17, 18 and 19.

EXAMINER STOGNER: Exhibits 17, 18 and 19 will be admitted into evidence.

EXAMINATION

BY EXAMINER STOGNER:

Q. That last bit of testimony, 34 wells, 27 were perforated below 7000 feet. How many of them were producing? I didn't catch that number.

A. How many of them were producing currently?

Q. Yeah. You gave a number --

A. Okay.

Q. -- after you said 35 of the 27 wells perforated below 7000, and you gave another number and I missed that.

A. Okay, what my previous statement was, was that 27 were originally perforated below 7000 feet. That leaves

seven exceptions. Six of those exceptions did not encounter pay below 7000 feet.

Q. Okay, did not encounter pay?

A. Right. And I further qualified that as saying that two wells were not deep enough, one of which was the discovery well. Four of them were edge wells in the pool and simply did not encounter pay.

Q. While I have this real nice list of all the wells, could you identify for me those five wells that are capable of producing over the 170-barrel-of-oil-a-day limit?

A. Okay, they would begin at -- near the bottom of the first page of Exhibit 17. They are the James E 4 and 5.

Q. James E 4 and 5.

A. And the other wells would be on page 2, James E 11, Livingston Ridge -- Excuse me, James E 13 and the Livingston Ridge 1. James E 11, E 13 and Livingston Ridge 1.

Q. Okay. Now, you show on here two water injectors. Those are the two injector wells within the Cabin Lake -- or the pressure maintenance project?

A. That's correct.

Q. And just for -- while I have this real nice list here, what are the other two wells that are being affected

by the waterflood?

A. Okay, those would be the four wells that surround the 12 W. Going back to Exhibit 1 in Section 2 --

Q. Let's stick with Exhibit 17.

A. Okay.

Q. I just want to find out which two of the wells are capable -- Okay, let me restate it.

A. Yeah, I understand it.

Q. Let me restate that. Which two wells are capable of producing over the 107 barrel-of-oil-per-day limit, but are also within the pressure-maintenance area and is not affected by this Order?

A. All right, James A 2 and James A 5.

Q. And the James A 2 is the discovery well; is that correct?

A. That's correct.

Q. Are any of these wells -- Let me rephrase that. Do any of these wells that have completions between the Cherry Canyon and Brushy Canyon, do any of them have a cap between the two horizons, separating those two?

A. A bridge plug?

Q. Yeah, a bridge plug.

A. Okay, essentially what you're looking at on Exhibit 19 are the exact completions, how the wells sit now, with two exceptions. Two wells have bridge plugs in

them.

Q. And which ones are those? The 15 and 9?

A. No, they are the James A -- Well, excuse me, there are three wells, but one is inactive.

Q. Okay.

A. The inactive well is the James A 10, and the James E 13 and the James E 11.

Q. Okay.

A. Now, I might add that those two wells have bridge plugs in them. They will be pulled in the near future. So what you are really looking at here is what you have in the field right now, with those two exceptions.

I might also add for clarification that, particularly regarding column 3 there, where I designate the 16 wells -- I'm looking at Exhibit 19 --

Q. Okay, Exhibit 19.

A. -- I show -- in the Brushy Canyon, I show four sets of perforations. That's for diagrammatic purposes only. In some cases there are three sets, in some cases there are five, but they basically traverse the entire Brushy Canyon interval.

Where I'm showing perforations just above the Brushy Canyon top, I'm implying they are in the range of 5600 feet. If it's just below that top, it's in the range of 6000 feet.

Q. In column 6 in which you have only one well, the James A Number 3, you show some perforations that are very high, but that's a water-injection well, correct?

A. Right. We tried to produce that interval, but it --

Q. And did it produce?

A. Not really.

EXAMINER STOGNER: Well, this is the information I requested, and I believe I'll be able to continue drafting an order.

I have no other questions of this witness at this time.

Do you have any, Mr. Stovall?

MR. STOVALL: No.

EXAMINER STOGNER: Mr. Morrow?

MR. MORROW: No.

EXAMINER STOGNER: Mr. Kellahin?

MR. KELLAHIN: That completes our presentation.

EXAMINER STOGNER: Well, with that, I will take, for a second time, Case Number 10,854 under advisement.

Thank you, sir.

(Thereupon, these proceedings were concluded at 10:18 a.m.)

* * *

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO )
) ss.
COUNTY OF SANTA FE )

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL January 1, 1994.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1994

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10854 heard by me on 16 December 1993.

Examiner
Oil Conservation Division

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING: ) CASE NO. 10,854

APPLICATION OF PHILLIPS PETROLEUM COMPANY

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ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: Michael E. Stogner, Hearing Examiner

October 21, 1993

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, October 21, 1993, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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# I N D E X

October 21, 1993
Examiner Hearing
CASE NO. 10,854



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## E X H I B I T S

| | Identified | Admitted |
|---|---|---|
| Exhibit 1 | 13 | 36 |
| Exhibit 2 | 15 | 36 |
| Exhibit 3 | 15 | 36 |
| Exhibit 4 | 19 | 36 |
| Exhibit 5 | 21 | 36 |
| Exhibit 6 | 22 | 36 |
| Exhibit 7 | 23 | 36 |
| Exhibit 8 | 24 | 36 |
| Exhibit 9 | 24 | 36 |
| Exhibit 10 | 26 | 36 |
| Exhibit 11 | 26 | 36 |
| Exhibit 12 | 26 | 36 |
| Exhibit 13 | 29 | 36 |
| Exhibit 14 | 31 | 36 |
| Exhibit 15 | 33 | 35 |
| Exhibit 16 | 36 | 36 |

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A P P E A R A N C E S

FOR THE APPLICANT:

KELLAHIN & KELLAHIN
Attorneys at Law
By: W. THOMAS KELLAHIN
117 N. Guadalupe
P.O. Box 2265
Santa Fe, New Mexico 87504-2265

* * *

WHEREUPON, the following proceedings were had at 9:33 a.m.:

EXAMINER STOGNER: Call next case, Number 10,854, which is the Application of Phillips Petroleum Company for a special oil allowable for the Cabin Lake-Delaware Pool, Eddy County, New Mexico.

At this time I'll call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing on behalf of the Applicant, and I have one witness to be sworn.

EXAMINER STOGNER: Are there any other appearances in this matter?

(Thereupon, the witness was sworn.)

EXAMINER STOGNER: Mr. Kellahin?

MR. KELLAHIN: Thank you.

Mr. Examiner, at this time I'll call Mr. Ken Schramko. It's S-c-h-r-a-m-k-o.

Mr. Schramko is a reservoir engineer.

KEN SCHRAMKO,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. For the record, sir, would you please state your

name and occupation?

A. Yes, Ken Schramko. I'm a reservoir engineer for Phillips Petroleum Company.

Q. On prior occasions, Mr. Schramko, have you testified before this Division?

A. No, I have not.

Q. Summarize for us your education.

A. I obtained a BS in petroleum and natural gas engineering from Penn State University in 1980.

Q. Subsequent to that, summarize for us your employment experience.

A. I've been employed by Phillips for the past 13 years. I've worked as a reservoir engineer in seven different locations.

I'm currently senior reservoir engineer in the Odessa office, and my primary responsibility is reservoir engineering duties with Delaware in southeast New Mexico.

Q. Are you familiar with the reservoir characteristics of the Delaware production and formation?

A. Yes, I am.

Q. Describe for us in a general way the kinds of involvements you've had in making studies of or examining production in reservoir data for Delaware production.

A. I have reviewed some 1400 wells in both Eddy and Lea County, New Mexico, including -- incorporating some 130

fields. To my knowledge, that represents the vast majority of the Delaware wells.

I've reviewed the production performance there and have studied the geology and general nature of the low permeability of the reservoir.

Q. Have you conducted a specific reservoir study or investigation of the Cabin Lake-Delaware Pool?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Schramko as an expert reservoir engineer.

EXAMINER STOGNER: Mr. Schramko is so qualified.

Q. (By Mr. Kellahin) As a result of the study that you've conducted on the Cabin Lake-Delaware Pool, can you describe for the Examiner the recommendations that you're proposing to him today?

A. Yes. Several months ago it came to my attention that we had five wells in the field that were producing in excess of the 107-barrel-a-day allowable.

At that time we undertook the study to look at what effects that may have had on the reservoir.

As a result of that study we have concluded that there has been no adverse effect on the reservoir, that there has been no violation of the correlative rights.

And based upon that, we're here today to ask that the allowable at Cabin Lake be increased from 107 barrels a

day to 187 barrels a day, and also that the overproduction that I've just mentioned be eliminated.

Q. How did you become involved in the study of this pool that resulted in those two recommendations?

A. You mean how did all of this begin?

Q. Yes, sir.

A. Several months ago -- Well, several months ago we were in the process of drilling a well in a nearby field, in Livingston Ridge East, and I knew it had a 187-barrel-a-day allowable, and it came to my attention that we had several wells in this field producing at higher rates. That immediately set several chains of events going.

One, this study, which is why we're here.

Secondly, it led to our operations manager and our head of our proration group to go to Artesia and visit with the Division folks there, and to discuss the situation.

Q. The issue of what to do, if anything, with regards to production from the Cabin Lake-Delaware Pool has been discussed with the area supervisor of the Oil Conservation Division, Mike Williams?

A. Mike Williams, that's right.

Q. Your involvement, now, let me focus in on that. What was the purpose of what you were supposed to do?

A. Okay. I needed to look at the reservoir

performance, and we just -- We wanted to know if there were adverse effects that -- Had the overproduction resulted in any waste or had it violated any correlative rights?

Q. Based upon the answers to those questions, were you able to reach any conclusions as a result of your study concerning the Delaware?

A. Yes, neither of those are occurring. There are no adverse effects. There is no drainage occurring, and there are no violations of correlative rights.

Now, we've also, as part of this study, looked at the nearby fields to Cabin Lake.

Q. Let me ask you this: When you looked at the Cabin Lake Pool and the other Delaware pools in the area, from a reservoir sense or a geologic sense, did you see any reasons that Cabin Lake should be treated differently in its rules and procedures than the other pools?

A. No, the technical comparison of the fields is identical.

Q. As a result of your study, did you find any technical basis for having the allowable for Cabin Lake set at 107 barrels a day, versus 187 barrels a day?

A. No.

Q. As part of your investigation, did you see any relationship in terms of oil and gas withdrawals, gas-oil ratio relationships, that should be of concern to you or

the Division?

A. Yes. You're referring to the reservoir study that was undertaken --

Q. Yes, sir.

A. -- and how we came to the conclusions?

Yes, we looked at the reservoir as a whole, understanding the Delaware -- It is a solution gas drive reservoir.

We wanted to assure ourselves there was no creation of a secondary gas cap, and one way to do that is to look in detail at the GOR data that is available in the field.

That GOR data suggests there's no secondary gas cap, there is nothing detrimental occurring.

Q. Were you able to reach an engineering conclusion concerning whether or not changing the oil allowable from 107 to 187 was going to have an adverse effect on the gas-oil ratio?

A. Yes, yes, I've concluded that there would be no change in the GOR in the field.

Q. What is the gas-oil ratio that applies to the Cabin Lake?

A. It's 2000-to-1 GOR.

Q. And do you propose any change in that gas-oil ratio?

A. No, no, the current GOR in the field is about 600 to 800 standard cubic feet per barrel. No need for a change.

Q. All right. Describe for us -- Before we get into the displays, describe for us what your research shows you to be the reason Cabin lake has a lower daily oil allowable than the other Delaware pools in this area.

A. At the present time, or I could say for the past three years, essentially all Delaware wells, at least in this area, are being drilled to the Bone Spring, which means they're penetrating all of the Delaware.

The unique instance at Cabin Lake is that the discovery well there, the James A Number 2, was drilled only to the Cherry Canyon member of the Delaware at about 6000 feet. It was completed at that interval and, based on state rules, depth bracket allowable was set at 107 barrels a day.

Of course, subsequent to that we are now drilling, as I've just described, current Delaware wells, but they are obviously...

Q. In Cabin Lake, is all the Delaware production confined to the shallower Cherry Canyon member of the Delaware?

A. No, no, it's not.

Q. In fact, substantially most of the production

comes from the Brushy Canyon at this point?

A. At present, 13 of the wells are still producing from the Brushy Canyon.

Q. The other pools in the area have had a depth bracket based upon a lower depth, and they achieve that by having the initial discovery well drilled to the lower member of the pool?

A. That's correct.

Q. Do those other pools also have Cherry Canyon or shallower Delaware production contributing to oil recoveries in those pools?

A. Some do, some do not.

Q. Are you able to determine any logic or reason for continuing the allowable differential between Cabin Lake and the other Delaware pools around you?

A. No.

Q. As part of your study, did you make an investigation not only of the waste issue, but of the correlative rights issue?

A. Yes, I did.

Q. Were you able to reach any conclusions as to whether or not correlative rights would be impaired or violated if Mr. Stogner approves your request?

A. Yes, I reviewed that issue and concluded there is no violation of correlative rights that needs to be, you

know, factored in.

Q. With regards to the overproduction, which was production charged against, I guess, five wells in the pool --

A. That's right.

Q. -- in excess of the 107 barrels a day, what do you propose to do about that volume of overproduction?

A. Well, basically we're saying that the overproduction has caused no damage to the reservoir, so we're asking that it be canceled.

Q. Do you see any reason, in order to protect correlative rights or equity among spacing units, to have the overproduction shut in so that other spacing units would have a chance to get back in balance, if you will?

A. Right. No, there's no balancing problem here.

Q. Is there a unique circumstance about the ownership and operation of the pool that avoids a correlative rights issue for the pool?

A. As far as operators?

Q. Yes, sir.

A. Yes, Phillips operates 24 wells that are currently producing. There are only three other wells that produce from this pool. In fact, Phillips -- The Phillips wells represent 99 percent of all of the production in the pool.

Q. Let's go to your Exhibit Number 1.

A. Exhibit Number 1 is a well plat of the area. The yellow acreage designates the Phillips -- or, excuse me, the yellow area designates the Phillips acreage. The red outline are the current pool boundaries.

Q. Okay. Let's talk about other operators for a moment so that Examiner Stogner sees where they are.

We sent notice to Grace Petroleum or Corrine Grace?

A. Corrine Grace.

Q. Where is the well that is designated in this pool that is operated by Grace?

A. In the upper right in Section 36, in the southwest quarter, the Salomen Number 1.

Q. Have you received any objection or concerns from Grace about granting the request that Phillips seeks?

A. No, we have not.

Q. Let's go to the -- There was some Heyco and some Yates notices sent. Where is the Yates well in the pool?

A. The Yates well is in the upper right -- or excuse me, the upper left in Section 34. It's the Julia AJL Federal Number 4.

Q. Are there any other Yates or Heyco wells in the pool?

A. Yes, just south of there in Section 3 is a Heyco

well.

There is also a well not shown in here, but it is recognized as a Cabin Lake well. At the very bottom of this land plat you see it described verbally. It's the Yates Kaleidoscope AKO Federal Number 1. It's located in Section 33, which is just one section west of the Yates well in 34.

Q. Has Yates or any of the Yates companies or Heyco called to register any objection or protest to the granting of this Application?

A. No, they have not.

Q. Within the operations of Phillips, is there any disparity between royalty and overriding royalties that create a correlative-rights issue that the Examiner needs to attend to?

A. Yes, the issue that you're referring to is that the James A lease is a state tract; all others are federal tracts.

So the correlative rights issue that we'll be addressing will be the possibility of drainage of the over-produced wells, which are on federal lands, possibly draining state acreage.

Q. All right. And the state acreage, then, is Section 2?

A. That's right, Section 2 of the James A lease.

Q. And anything else on the plat with a producing well is going to be a federal lease?

A. Right.

Q. All right, sir. Help us set the stage, Mr. Schramko, with the relationship of Cabin Lake to other Delaware pools in the area. And to do that, would you identify for me Exhibit Number 2?

A. Right. Exhibit 2 is a map of southeast New Mexico. It shows Cabin Lake in approximately the center of that diagram.

To the east of it are several fields: the Lost Tank Field, the Livingston Ridge field, and the Livingston Ridge East field.

To the southern portion there's the Sand Dunes West field, and further east of there there's the Ingle Wells field.

Also shown on here are the current allowables for these fields.

Q. Okay.

A. And I might add that this represents all of the Delaware in that area, not just selective.

Q. Okay. All right, sir, let's turn to Exhibit Number 3.

A. Exhibit 3 is a diagram that will attempt to say as clearly as we can the similarity between Cabin Lake and

the various fields.

Q. Help us get oriented on the display now.

A. Okay.

Q. Show us the information first, and then we'll talk about the reasons.

A. I'm representing three fields here: Cabin Lake, Ingle Wells and Sand Dunes West. And from top to bottom on the page, if you look at the left, you'll see the Delaware tops, where the various fields penetrate the Delaware tops, the Cherry Canyon and the Brushy Canyon members of the Delaware.

And the key point that I will be driving at here is to show that the Cabin Lake field is being produced in a manner that is consistent with these other fields, yet it has the allowable discrepancy because of its discovery well.

Now, if I can, I'd like to start with a discussion of Sand Dunes West.

Phillips just recently drilled the Christopher Federal 31 Number 2, and we are in the process of completing that well. It speaks for the discovery well in that field, and it also speaks for all other wells in that field.

And basically the wellbore is drilled to about 8000 feet, it is completed in an interval in the Brushy

Canyon from 7800 to 7900 feet. That is the initial completion of the well, and that is all that it has produced for some period of time.

At some point the production -- In this field, typically, the production continues to some level and the upper Cherry Canyon member is perforated.

Q. At this point in the Sand Dunes West development, is both the Brushy Canyon member and the shallower Cherry Canyon member open in certain wellbores and commingled in one production stream?

A. Yes, we've been told by Enron that they have several wells that have been producing -- that are now completed in both intervals. But again, their well initially completed the Brushy, and they moved uphole.

And we also have Cherry Canyon in our well. That's exactly what we anticipate doing.

Q. Do you see any reservoir difference between Sand Dunes West and Cabin Lake that should cause a differential in allowable to exist between those two pools?

A. No.

Q. All right. How about the Ingle Wells Pool?

A. Okay. Ingle Wells is a slightly different story, but it leads to the same thing.

Initially in the Seventies, there were Cherry Canyon wells drilled. There were about 10 or 12 of those.

And I might add that at that time when those were drilled, it was actually called the Sand Dunes field.

In the beginning of 1990, Brushy Canyon wells were drilled to similar depths, and wells are now completed in the Brushy Canyon. These wells are all on the same contiguous acreage.

And in fact, these Brushy Canyon wells have penetrated the same Cherry Canyon reservoir as the original wells, the point being there that the current Brushy Canyon wells are receiving a 187-barrel-a-day allowable.

Now, not being an operator in this particular field, I'm uncertain how they achieved this. It appears they've treated it as two reservoirs. But the key point being that the Brushy Canyon wells have the 187-barrel-a-day allowable when, in fact, the initial discovery well, if we could call it that, in the Delaware, was a Cherry Canyon well.

Q. Okay. And then you move back to the Cabin Lake, the illustration on the far left of the display?

A. Right. It is something of a mixture of those two cases in that our initial discovery well, the James A 2, was drilled only to the Cherry Canyon, completed in the interval 5625 feet to 5940.

I might also add, that well was drilled in 1988. For Phillips at that time, the Delaware was an exploratory

play. So when we encountered pay in the Cherry Canyon, we were happy, and we stopped there.

Q. And you stopped?

A. Subsequent to that, we reviewed our geology of the area and thought, well, there could be additional pay zones down in the Brushy Canyon that at the time we drilled the original well we weren't sure or didn't know.

And so following that, some 28 wells were drilled, and all but one of those was drilled to the Brushy Canyon and originally completed there. That's identical to what occurred in the Sand Dunes.

Q. But your Brushy Canyon production, if you will, is now being controlled by a shallower depth bracket allowable that was based upon the discovery well having been initially completed in the shallower Cherry Canyon?

A. That's correct. And as in Sand Dunes, we have an uphole Cherry Canyon zone that we will typically come back and recomplete.

Q. Okay. Let's go to Exhibit Number 4. Identify Exhibit Number 4.

A. Sure. Exhibit Number 4 is identical to the first exhibit I showed, with the exception there are seven red arrows on there highlighting the various wells, and these are the top allowable wells in the field.

Q. By "top allowable" you mean currently for 107

barrels a day, these wells have some potential to exceed or meet that allowable?

A. That's correct.

Q. Okay.

A. I'll begin by discussing the James A -- the two wells on the James A lease that are noted, the Number 2 and the Number 5.

Those two wells are part of a pressure-maintenance waterflood project. As such, they would not be impacted by the outcome of this hearing.

The five wells, however, that will be impacted are shown as the Livingston Ridge Number 1, and four wells on the James E acreage, the Number 4, the Number 5 in Section 11, and wells Number 11 and 13 in Section 12.

Q. I want you to help me set the stage for discussing reservoir waste so that we can see whether or not you have adequate reasons to support the conclusion you've made, which was increasing the depth bracket allowable was not a waste problem or a waste issue.

If you'll go to the geologic presentation, let's see if there's a geologic component --

A. Right.

Q. -- to the waste issue.

A. Okay. The next sequence of exhibits that I'll be showing will be addressing the issue of waste.

And basically we're looking for any sort of structural component that could impact this reservoir, whether there could be water encroachment or not. We're looking for any trends that we might see in the GOR regarding a secondary gas cap formation.

Q. When we look at Exhibit 5, what are we seeing?

A. Exhibit 5 is a structure map of the Cabin Lake pool in the Cherry Canyon.

Q. Help us use this exhibit to illustrate the points and conclusions, then, that support your ultimate opinion that waste is not a concern.

A. Right. What this exhibit is demonstrating is that the Cherry Canyon is a relatively flat formation as it overlays this land. There is some structural dropping to both the east and the west, but the vast majority of the wells are on a structural plain.

And what this would discuss, then, is in terms of a gas cap. I am looking for any wells that would be exhibiting some high-GOR behavior, and it could be any of the wells that would be on that structural high.

If you will look at some of the finer detail of that plain however, you'll see that there are some wells that -- In fact, the James E 13, which is one of the wells we'll be discussing, is one of the highest wells on that structure, but again it's still relatively flat.

Q. What conclusion did you come to with regards to whether structure has an effect in this particular pool on well performance?

A. There is no structural component here.

Q. Describe for us the drive mechanism for this particular pool.

A. It's a solution gas drive reservoir.

Q. Do you see any water-drive effect or any combination of other drive influences that would affect the production in this reservoir?

A. No.

Q. Is this a rate-sensitive reservoir so that we need to control withdrawals to 107 barrels a day in order to optimize ultimate oil recovery?

A. I haven't shown it yet, but no, it is not. It is not rate sensitive.

Q. Let's go now to Exhibit Number 6.

A. Okay. Now, the next sequence of exhibits will all be addressing primarily the GOR behavior of the field. There's a number of these, and we're going to be -- It might seem a bit redundant, but I wanted to show all of this data in as many ways as possible to leave no questions.

Exhibit 6 is a production plot for the entire field of Cabin Lake. The oil production on this and

subsequent production plots is shown in black, the water in red, and the GOR in blue.

The high-capacity wells we spoke of began their higher rate production in 19- -- in the latter part of 1992, and some of those wells came on n 1993.

If you look at the GOR behavior of that plot, you're seeing no increase in the GOR versus time. It is relatively flat since the beginning in 1988 through the current, and that level is somewhere around 600 to 800 standard cubic feet per barrel.

Q. Have you examined not only the total pool production and plotted gas-oil ratio, have you looked at individual well performances?

A. Yes.

Q. Let's turn to those.

A. The next five exhibits are of the five wells that are capable and have been producing at the higher rates.

You will notice I will be picking the time of this workover and the time at which it began the higher rates from the oil production plot.

The first one is Exhibit Number 7. This is for the James E Number 4 well. This well was worked over in approximately June of 1993, at which time the oil production increased to a level of about 200 barrels a day. The key point that I will be making here and on subsequent

ones is that the GOR has not shown any increase in this well.

Q. Please continue.

A. Okay. The next exhibit is Number 8. This is the James E Number 5 well, also recompleted at approximately the same time, June of 1993. It came on with a rate of -- a post-workover rate of about 1980 barrels a day. Again, the GOR has not changed with time or as a result of that workover.

Exhibit Number 9 is the James E 11. This well was worked over in the early part of 1993. You can see that the oil rate indicates a post-completion initial rate of 250 barrels a day.

This well also demonstrates the typical decay that we expect to see in the Delaware, such that in three months the oil rate is already down to about 170 barrels a day and declining.

Again, the GOR shows no increase.

Q. Let's use this as an example --

A. Okay.

Q. -- Mr. Schramko. You know, we've got five wells that are overproduced. Describe for us how that happens in an operational sense with regards to these wells and how their performance fits or doesn't fit with the expected steep decline of the Delaware oil wells.

A. The basic behavior of Delaware is, it is a tight reservoir, it requires hydraulic fracturing in almost all cases to be economically produced, and as a result of that stimulation you see a very precipitous decay very early in the life of either a new well or a recompletion. And this well is indicating that, the steepness of that decline.

Now, the way that impacts you operationally, obviously you need to honor allowables. But there are instances were our wells will decay to below allowable within two months.

So often operationally, you allow the well to produce at a higher rate in the first month, knowing or expecting that it will decay rapidly.

Q. Was this part of the discussion with Mike Williams concerning how to manage this particular pool and what to do about the overproduction and the allowables for this pool?

A. Yes, it was part of the discussion, yes.

Q. Did you advise Mr. Williams that you or Phillips were undertaking a reservoir study to determine what should be done with the overproduction?

A. Yes, we fully recognized that the overproduction -- that some decision needed to be made and we needed to find out what the alternatives were.

Q. Please continue, then. Have you concluded with

Exhibit 9?

A. Yes, I'm saying the same thing on virtually all of them.

The next one is Exhibit 10. This is the James E 13. The primary difference here is that this well was worked over in November of 1992. It is one of the earlier wells, and it came on at a rate of between 350 and 400 barrels of oil a day. It is a flowing oil well at this time. It's the only flowing well we have in the field.

Again, the GOR behavior, we do not see the increase there.

Q. Okay.

A. The last one is Exhibit Number 11 which is the Livingston Ridge Number 1. This well was recompleted in about May of 1993. It initially produced at a rate of 200 barrels per day. It has declined to about 165 barrels a day. Again, no GOR increase.

Q. Let's turn now to Exhibit Number 12 and have you summarize that display for us.

A. Okay, this is a -- something of a recap on the GORs for these five wells, but it also compares the GOR for all the wells in the field, currently. The five wells that I just discussed are shown with an asterisk on the left side.

And the basic conclusion to be drawn here is that

the five wells in question, the highest current GOR exhibited by those is the James E 13, and the GOR for that well is 1465 standard cubic feet per barrel.

There are approximately six wells in the field that have higher GOR than the highest of these wells. And, in fact, the five wells are average and typical for the field.

Q. The asterisk'd wells on Exhibit 12, then, are those that have the capacity to produce more than 107 a day?

A. That's correct.

Q. And in each instance, their producing gas-oil ratio is below 2000 to 1?

A. That's correct.

Q. Let's go through and discuss the Livingston Ridge 6, which is not a top-allowable well. It's got a gas-oil ratio in August of 1993, 13,500?

A. Yes. In fact, this well is -- It's either inactive or should be. Yes, we're showing it as inactive at the present time.

At the time of this well test, this well was making two barrels of oil and 27,000 MCF a day.

Q. And that explains --

A. So that's 13,500 GOR. That's typical of wells that are about depleted.

And I guess I should also add, the other wells that are above the 2000-to-1 are also wells that are making in the range of 30 to 40 barrels a day and then have gas rates that are well below the allowable limitation.

Q. Is there sufficient data to determine whether or not the Cherry Canyon has a different gas-oil ratio from, say, the Brushy Canyon?

A. When you say is there sufficient data --

Q. Uh-huh.

A. -- I would say that data would come as a result of the studies I have done of all the Delaware pools.

I don't have anything here, but basically the answer is, no, there's no difference between the two in terms of GOR.

Q. So commingling, if you will, the two members of the pool and producing them as one common stream is not going to have an effect on the gas/oil ratio?

A. It would have some, because locally you could have some variation between -- within a given well, such that the commingling could alter it.

But in terms of adding Cherry Canyon to the Brushy and as a result causing the GOR to go to 4000 to 1, no, that's -- and I think that's what you're asking me -- that would not occur.

Q. Did you see any indication that as you worked

over these wells and added new productivity to them that you were affecting the gas-oil ratio in an adverse way?

A. No.

Q. Let's turn to Exhibit Number 13. Identify and describe that display.

A. Okay. This shows the GOR history for the five wells that have produced in excess of the allowable.

On the left side I'm showing the quarter and the year in which the well test may have been taken for these five wells.

The line that you see for each of the five wells represents the point in time in which the well was worked over and the same moment in time at which the well was capable of producing at the higher rates.

The conclusion is the same for all wells. It demonstrates itself visually, that the after-workover GOR is not higher than the before-workover GOR.

In the case of the James E 4 and the James E 5, you can see that the allowable in following the workover -- for the James E 4, it's 259, and that is less than anything we saw prior to that.

The same conclusion can be drawn from the James E 5, which has a current GOR of about 727.

The same for the James E 11, which has a current GOR of 162.

James E 13, current GOR is 1465, and that's less than before the workover.

And again, the same holds true for Livingston Ridge 1. Its current GOR is 629 to 743, and that's less than before the workover.

Q. In terms of reservoir management, so that you optimize the opportunity to get the greatest amount of oil out of the reservoir, do you see any reason to continue 107 barrels a day for this pool?

A. No.

Q. Let's examine the correlative rights issue now. Let's go back to Exhibit 4 as a point of reference.

The well in Section 2 in the southeast of the southeast, the James A 7, that's a State of New Mexico lease, oil and gas -- oil well?

A. That's correct.

Q. And it is offset, then, by federal wells that would be top allowable wells at 107?

A. That's right.

Q. Those wells have the capacity to produce more than 107 a day?

A. That's correct.

Q. All right. I guess the first question in examining correlative rights is to see if those four wells, the state well and the three federal wells, are competing

for hydrocarbons in the same completion intervals.

A. That's right.

Q. Do you have something that illustrates how those wells are completed?

A. Yes, that's the cross-section, which is Exhibit 14.

Q. Identify the exhibit for us, and then we'll discuss what it means.

A. Okay. If I could -- In the lower right corner it shows a small map of Cabin Lake, and it shows the cross-section, beginning with James A 7, moving east to the Livingston Ridge number 1, moving then to the southwest, the James E 4, and then again to the east to the James E 11, in a Z pattern.

If I could draw your attention to the line that traverses the cross-section itself, titled the Datum Main Cherry Canyon Pay Interval, that line is simply a hanger from which we've correlated the four wells.

And the first item that stands out visually is that the James A 7 is completed in an interval that does not exist in the three federal wells. That's the interval, if you'll pardon the small lettering, but it's the interval shown -- Oh, I should add that the perforated intervals in these wells are shown with the small circular dots to the right of each of the logs, so that if you look at the James

A 7 and the uppermost interval there with the five black dots, that does not exist in the other three wells.

The other issue of importance is that when you look at the reservoir quality of what's left, starting with the three federal wells, you see a rather large thickness. And what I'm looking at are the -- This is the mud log, and I'm looking at the mud-loggers, the areas that are showing the fluorescence, which is the black-shaded areas on each of these logs.

A visual comparison of those three, I see similar-looking pay sections. That's confirmed by the porosity and the resistivity logs. When I look at the James A 7, there's not near the thickness, there's not near the volume of perforated interval.

Basically, the conclusion is that the high productivity from these wells is basically the reservoir quality.

So first we have a well in the James A 7 that's completed in an interval that does not exist over here. The interval that does correlate across here is not of the quality that the other three are.

Q. When you look at the James A 7, what is your conclusion about whether that well has been perforated in all its potentially productive intervals in the pool?

A. It is completed in all intervals.

Q. So if it could compete, it now has a chance to compete?

A. That's correct.

Q. When you're looking at correlative rights, which is simply your opportunity to have your relative share of the hydrocarbons in the pool, will changing the allowable adversely affect the James A 7's chance for that opportunity?

A. No, it will not.

Q. Will it cause the other top-allowable wells around it to deplete or take oil that the James A 7 might otherwise recover?

A. No.

Q. Let's go to Exhibit 15, Mr. Schramko. Would you identify that for us?

A. Yes, this is a production plot for the well that we just reviewed, the James A 7. This will further substantiate that drainage is not occurring.

This well was recompleted in approximately January of 1993, to the intervals that I just showed on the cross-section, and it came on at a rate, as logs would have predicted, at about 100 barrels per day.

Now, you do see the precipitous decline there quickly to 80 barrels per day in about March of 1993.

The interesting aspect of the production plot,

however, is that the production since that time shows no precipitous decay.

Q. Can you compare on Exhibit 15 to show us the point in time on that production profile at which we could expect an effect or influence on the James A 7 if it was being influenced by the offsetting production?

A. It would be in the recent months of production. I believe what you're asking me is when in time would I expect this well to be influenced if drainage was occurring?

Q. Yes, sir.

A. I would say certainly within the last couple of months of that production.

Q. And do you see any change in slope in the oil plot that would cause you to conclude that it is being affected by the offsetting wells?

A. No.

Q. Okay.

A. No, I do not.

Q. The five wells that have booked overproduction, has Phillips stopped overproducing those wells so that at some point in time, until the Examiner decides how to resolve this, they have not continued to accrue additional overproduction at the 107-barrel-a-day rate?

A. Yes, you're referring primarily to the James E

13, which is the highest-rate well.

When all of this came to everybody's attention, we looked at the situation, had the meeting with Mike Williams. We immediately took action to reduce the production from that well to 107 barrels per day, pending the outcome of this hearing.

Q. All right, sir. Based upon all your work, Mr. Schramko, summarize for us, then, what you believe to be the appropriate solution for Examiner Stogner.

A. I feel that from a reservoir standpoint, there has been no waste occurring, that there has been no violation of correlative rights, the drainage has not occurred across the federal and state lands.

I feel that we've shown there are fields in the vicinity of Cabin Lake that are completed in manners that are essentially identical to Cabin Lake and which are benefitting from the 187-barrel-a-day allowable, and that the comparison is such that because there is no reservoir adverse effects and because of this analogy, we feel that increasing the allowable to 187 would be appropriate.

Q. Do you see any reason to have Phillips make up, if you will, the overproduction? And if so, to what purpose would that serve?

A. It would perhaps be appropriate if there was some balancing that needed to be taken into account between the

various spacing units.

We don't see any of -- Again, it's the drainage issue across the federal and state lands. There is no need to put those into balance, so we feel that eliminating the overproduction would have no adverse effects as well.

MR. KELLAHIN: That concludes my examination of Mr. Schramko.

We move the introduction of his Exhibits 1 through 15, plus the notice exhibit, 16.

Total exhibits are 1 through 16.

EXAMINER STOGNER: Exhibits 1 through 16 will be admitted into evidence at this time.

EXAMINATION

BY EXAMINER STOGNER:

Q. You indicated that Phillips has 24 wells out there presently producing, right?

A. Presently producing, producing oil wells, yes.

Q. And three other producing wells, so that would bring the total number in the field -- I mean in the Pool -- as 27?

A. What I'm not including in the 24 is that there are two active water injection wells, and there are two additional inactive oil wells on Phillips' acreage.

There is an additional well. The one that is described verbally at the bottom is an inactive oil well.

Q. Okay. Well, let's start by some elementary -- Is the Cherry Canyon and the Brushy Canyon, is that a well defined boundary between those two intervals of the Delaware Pool?

A. I've been at various geologic conferences, and there is debate as to where the two -- where the top and bottom is.

A. I'm not asking about conferences. I'm asking about this particular pool in which you're coming in today requesting this. Now comes the danger of getting the pool split up, if you want to consider that a danger. But we need to cover that at this point.

A. If you're referring to the correlation from well to well, it is not a problem.

Q. So there is a well-defined interval?

A. Yes.

Q. Okay. And I'm a little confused here. Whenever I look at your Exhibit Number 14 and correlate onto Exhibit Number 3, I really don't show any Brushy Canyon -- what depth interval your Brushy Canyon is.

A. Okay.

A. I'm a little confused here what the depth is.

A. Okay, the cross-section you're looking at in Exhibit Number 14 is entirely Cherry Canyon. Okay, there is no Brushy Canyon there.

The reason for that is because the drainage issue we're referring to in Exhibit 14 is -- if it's occurring, is up in the Cherry Canyon.

Q. Okay.

A. If you look close at Exhibit 14, it runs from a depth at the top from approximately 5200 feet down to about 6500 feet.

Q. Okay. Why was 187 barrels chosen, and what do you base that on?

A. Okay, we're basing that on the fact that if we were drilling Cabin Lake today and we drilled our initial well, it would be drilled to the Brushy Canyon and it would be completed there at a depth of about 7600 feet.

Q. As opposed to the Cherry Canyon, which is up at the --

A. That's correct.

Q. -- 5000- to 6000-foot interval?

A. That's correct. And as I stated, really 26 of the wells were completed in that fashion.

Q. How many?

A. Twenty-six. There were only two wells, two of the producing wells that we drilled, that were -- that stopped at the Cherry Canyon.

Q. Okay. Are there any wells that -- and I don't want to use the word "commingling", but have perfs in the

Cherry Canyon interval and the Brushy Canyon interval, in this particular pool at this time?

A. Yes.

Q. There is? How many and which ones?

A. It would be the vast majority of the wells.

Q. I thought you said only two wells were Cherry Canyon producers?

A. There's only -- No, okay, I apologize. Only two wells in the field were drilled and stopped at the Cherry Canyon. All other wells penetrate both the Cherry and the Brushy Canyon.

Q. Okay. So what is a typical Cabin Lake-Delaware completion? What kind of perforations do you see?

A. At the present time, we are drilling our wells to the base of the Brushy Canyon, we will typically perforate the Brushy Canyon, stimulate it, and put it on line as a pumping oil well.

Q. And what about the Cherry Canyon interval?

A. We reserve it for later, later completion. We do that primarily because it's better from an operational standpoint to produce your reserves that are lower in the well first.

Q. How many wells in this pool have both Cherry Canyon and Brushy Canyon intervals open to the wellbore?

A. That would be almost all of them.

Q. Am I missing something here? You told me that 26 of your wells are completed, perforated in the Brushy Canyon, and you're reserving in the Cherry Canyon for later.

A. Well --

Q. Now you're telling me that the vast majority of them are both perforated in the Cherry Canyon and the Brushy Canyon.

A. The initial completion of the wells is such that we start with the Brushy Canyon. At later points in time we will come up and add perforations in the Cherry Canyon.

MR. KELLAHIN: What you're not giving him is the time sequence there, Ken.

THE WITNESS: Okay, the field began in 1988, so we had probably 10 or 12 wells that produced from the Brushy Canyon in that same time span.

And subsequent to that, as we've drilled up the field and we've moved into the 1990s, all of these wells have been plugged -- No, excuse me, I said plugged back. But, excuse me, perforations have been added in the Cherry Canyon.

So at the present time if I say that a well is perforated in both the Brushy Canyon and the Cherry Canyon, I'm saying -- I don't know off the top of my head, but it's almost all of the wells.

MR. KELLAHIN: But the producing sequence of all but two of the wells was to produce the lower first?

THE WITNESS: That's correct.

MR. KELLAHIN: At this point in time, as of today when -- Examiner Stogner's concern, we have moved up and also perforated into the Cherry Canyon?

THE WITNESS: That's correct.

MR. KELLAHIN: So now he's dealing in a reservoir that's got wells completed in both intervals?

THE WITNESS: That's correct.

Q. (By Examiner Stogner) Okay. When you say this is a solution gas drive reservoir, are you taking the whole reservoir into account, including both the Cherry Canyon and the Brushy Canyon?

A. Yes.

Q. Okay. You're not looking at them as being two separate sources?

A. No.

Q. Are they in communication, other than just the wellbore perforations?

A. No.

Q. So essentially you have two separate reservoir drives?

A. Two separate solution gas drive reservoirs, noncommunicated?

Q. Yes.

A. Yes.

Q. But through the completion of it, or since 1988, essentially the Delaware -- when we talk Delaware, the Cherry Canyon and the Brushy Canyon are all in communication?

A. That's -- Through the wellbore?

Q. Through the wellbore.

A. Yes.

I think I might add, if I may, that what we have seen in our fields, speaking generally about the Delaware, is that it's -- both zones need to be present in order for the trend to be economically developable, such that if it was to be treated as separate reservoirs, then we would feel the need as operators to in almost all cases come in and ask for commingling permits.

Q. Do you have a feel of what percentage of the production -- your basic overproduced well of the five -- what percentage is it from the Cherry Canyon and what percentage is from the Brushy Canyon? Just a rough --

A. At present? Probably 75 percent from the Cherry, 25 percent from the Brushy at present. It might even be a little higher than that.

Recognizing, of course, that the Brushy Canyon was produced by itself for many years prior to adding the

Cherry.

Q. Okay. Did Phillips do most of the development, or did Phillips buy producing wells from other parties?

A. We did the development.

Q. You did the development, okay.

When you refer to a waterflood or a secondary recovery project going on --

A. Uh-huh.

Q. -- over in that state section, how large is that, and is that both in the Brushy Canyon and the Cherry Canyon?

A. Yes, it is.

Q. And how big of a -- Where is that waterflood? What kind of an area?

A. The wells you're referring to, if you will look on the James A lease at the 12 W well, the water injection well, that's the initial -- that well is in the center of a fivespot, which includes wells James A 2, 5, 6 and 7.

Q. And is that Number 3 -- is that a water injection well?

A. Yes, it is. It's an expansion of that waterflood.

Q. Okay. Do you know what actual area that waterflood takes or what was approved for the waterflood area?

A. Well, looking by -- No, I don't know the actual number. Judging by the map, it would be 160 acres.

Q. Okay. And the water injection intervals are in both areas or zones?

A. That's right.

EXAMINER STOGNER: I have no other questions, Mr. Kellahin.

MR. KELLAHIN: All right, sir.

EXAMINER STOGNER: Do you have any other questions of this witness?

MR. KELLAHIN: No, sir.

We'd be happy to provide additional information if you need it now or later. If you want the waterflood profile or the waterflood pattern map, we can dig that up and send it to you.

EXAMINER STOGNER: If you could just reference me the order which approved it, I think that will be sufficient.

MR. KELLAHIN: All right, sir.

EXAMINER STOGNER: What I was beginning to look at, and I think you saw where I was going on that, was -- In fact, I can't remember that one pool designation that we had 107 wells in, most of them are in the Brushy Canyon, and that pool got split out.

But this doesn't -- And again, it appeared that

this was the same type of completions that we had out there. But through additional testimony, that's not the case.

So with that, I'll take this case under advisement.

(Thereupon, these proceedings were concluded at 10:27 a.m.)

* * *

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO )
) ss.
COUNTY OF SANTA FE )

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL October 27th, 1993.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1994

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10854, heard by me on 21 October 1993.

, Examiner
Oil Conservation Division