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 YATES PETROLEUM CORPORATION FOR AMENDMENT OF THE SPECIAL RULES AND REGULATIONS FOR THE SOUTH BIG DOG-STRAWN POOL, LEA COUNTY, NEW MEXICO	CASE NOS. 12,374
APPLICATION OF OCEAN ENERGY RESOURCES, INC., FOR POOL CREATION AND SPECIAL POOL RULES, POOL CONTRACTION, AND CANCELLATION OF OVERPRODUCTION, LEA COUNTY, NEW MEXICO	and 12,401 (Consolidated)

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

May 4th, 2000

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, May 4th, 2000, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

May 4th, 2000
Examiner Hearing
CASE NOS. 12,374 and 12,401 (Consolidated)

(Continued...)

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A P P E A R A N C E S

FOR THE DIVISION:

LYN S. HEBERT
Attorney at Law
Legal Counsel to the Division
2040 South Pacheco
Santa Fe, New Mexico 87505

FOR YATES PETROLEUM CORPORATION; DAVID PETROLEUM CORPORATION; McMILLAN PRODUCTION COMPANY, INC.; and PERMIAN EXPLORATION CORPORATION:

CAMPBELL, CARR, BERGE and SHERIDAN, P.A.
Suite 1 - 110 N. Guadalupe
P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

FOR OCEAN ENERGY RESOURCES, INCORPORATED:

JAMES G. BRUCE, Attorney at Law
3304 Camino Lisa
Santa Fe, New Mexico 87501
P.O. Box 1056
Santa Fe, New Mexico 87504

* * *

WHEREUPON, the following proceedings were had at 1:33 p.m.:

EXAMINER CATANACH: Call the hearing back to order, and at this time I'll call Case 12,374, which is the Application of Yates Petroleum Corporation for amendment of the special rules and regulations for the South Big Dog-Strawn Pool, Lea County, New Mexico.

Call for appearances in this case.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, Berge and Sheridan. We represent Yates Petroleum Corporation in this matter, and I have two witnesses.

I also would like the record to reflect that I'm entering an appearance in this matter on behalf of David Petroleum Corporation; McMillan Production Company, Inc.; and Permian Exploration Corporation.

EXAMINER CATANACH: Additional appearances?

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, representing Ocean Energy Resources, Incorporated. I have three witnesses.

I would also ask at this time that the next case, Case 12,401, be consolidated for hearing with this case.

EXAMINER CATANACH: Any objection, Mr. Carr?

MR. CARR: No objection.

EXAMINER CATANACH: At this time we'll call Case

12,401, the Application of Ocean Energy Resources, Incorporated, for pool creation and special pool rules, pool contraction, and cancellation of overproduction, Lea County, New Mexico.

Are there any additional appearances in either of these cases?

Can I get all of the witnesses to be stand to be sworn in at this time?

(Thereupon, the witnesses were sworn.)

MR. BRUCE: Mr. Examiner, before we begin, the Ocean Energy Resources case requested several things, including new pool creation and an increased depth bracket allowable.

At this point we would like to delete from our Application any request to create a new pool. So it would remain the South Big Dog-Strawn Pool. We are withdrawing our request for an increased depth bracket allowable.

We do agree with Yates that the GOR should be increased, and, however, Ocean does seek a cancellation of the overproduction or, in the alternative, that it be produced -- that the well be allowed to produce at a somewhat lessened rate in order to make up the overproduction.

MR. CARR: Have we sworn the witnesses?

EXAMINER CATANACH: We did.

MR. CARR: So at this time we call Eric Cummins.

ERIC CUMMINS,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your name for the record, please?

A. Eric Cummins.

Q. Where do you reside?

A. Artesia, New Mexico.

Q. By whom are you employed?

A. Yates Petroleum Corporation.

MR. CARR: I would request that the record that Mr. Cummins testified in the preceding case, and at that time his credentials as an expert in petroleum geology were accepted and made a matter of record.

EXAMINER CATANACH: The record shall so reflect.

Q. (By Mr. Carr) Are you familiar with the Application filed in this case?

A. Yes, I am.

Q. Have you made a geological study of the area which is involved in this Application?

A. Yes, I have.

Q. Are you prepared to share the results of that work with the Examiner?

A. Yes, I am.

Q. Would you briefly summarize what Yates Petroleum Corporation seeks with this Application?

A. We seek the adoption of special pool rules and regulations for the South Big Dog-Strawn Gas Pool which provide for a special gas-oil ratio of 6000 cubic feet for each barrel of oil produced.

Q. Mr. Cummins, when was the South Big Dog-Strawn Pool created?

A. On February 26th, 1997, by Orders Number R-9722-C and 10,448-A, and has subsequently been amended to enlarge the pool to its current boundaries.

Q. Would you refer to what has been marked as Yates Petroleum Corporation Exhibit Number 1 and identify and review that, please?

A. Exhibit Number 1 is a land plat that shows the boundaries of the South Big Dog-Strawn Pool in green. It shows all the wells that are within the pool and within one mile of the pool boundaries. It also shows Yates Petroleum acreage highlighted in yellow.

Q. What rules govern the development of the Strawn formation in the South Big Dog-Strawn Pool?

A. Oh, I'm sorry. I'm sorry, Bill, repeat, please?

Q. What rules govern the development of the Strawn formation in the South Big Dog-Strawn Pool?

A. They are 80-acre proration units with a 445 barrel-a-day allowable.

Q. And those were adopted by Oil Conservation Division Orders R-9722-C and R-10,448-A?

A. That is correct.

Q. Statewide Rule 506, which provides for a gas-oil ratio of 2000 cubic feet of gas per barrel of oil produced still apply, do they not?

A. Yes, they do.

Q. What is the resulting authorized producing rate, do you know?

A. 445 barrels a day per each 80-acre proration unit.

Q. Why is Yates Petroleum Corporation seeking an increase in the gas-oil ratio for this pool?

A. Wells in the pool cannot produce at rates within the authorized GOR for the pool, and continuing to produce the wells at the current rates will result in hydrocarbons ultimately being left in the ground, thereby causing waste.

Q. Is Yates Petroleum Corporation Exhibit 2 an affidavit confirming that notice of this Application has been provided in accordance with Oil Conservation Division rules?

A. Yes, it is.

Q. And to whom was notice provided?

A. All Division-designated operators within the pool, and all Division-designated operators of a Strawn well within one mile of the pool, unless they're assigned to another pool.

Q. Let's go to Yates Petroleum Corporation Exhibit 3. Would you identify and review that, please?

A. Exhibit Number 3 is a structure map on top of the Strawn porosity in the Big Dog-Strawn South Pool. It shows that the Yates Petroleum Shell Lusk "ANB" Number 2, located in the southwest quarter of the northwest quarter, is the structurally highest well in the pool.

Q. Anything else?

A. (Shakes head)

Q. Shows the relative structural position of the Runnells and the Townsend Number 5 wells?

A. Yes, the Townsend Number 5 well, the Runnells Number 3 well in the northeast quarter of Section 11, and the Yates Petroleum Shell Lusk Number 2 well.

Q. Would you identify Yates Exhibit Number 4?

A. Yates Exhibit Number 4 is a Big Dog-Strawn South type log, which is the Yates Petroleum Corporation Shell Lusk "ANB" Number 2, which is in Section 11 of 16-35, located 1950 feet from the north line, 350 feet from the west line.

Q. And basically, what does this exhibit show?

A. This shows the map datum on the type log, which is the top of Strawn porosity. It shows basically the Strawn section, the producing interval out here, the top of the carbonate and the top of the Strawn porosity as it develops just below the top of the carbonate.

Q. And basically, can you describe the nature of the Strawn in the area?

A. The Strawn reservoir in the area is algal-mound-type facies that has porosity development that is somewhat arbitrary, it's not a blanket-type porosity system. There appears to be selective porosity to the distribution within the reservoirs out here.

Q. Will Yates call another witness to review the engineering portions of this case?

A. Yes, we will.

Q. Were Yates Exhibits 1 through 4 prepared by you or compiled under your direction?

A. Yes, they were.

MR. CARR: At this time we move the admission into evidence of Yates Petroleum Corporation Exhibits 1 through 4.

EXAMINER CATANACH: Exhibits 1 through 4 will be admitted as evidence.

MR. CARR: And that concludes my examination of this witness.

EXAMINER CATANACH: Mr. Bruce?

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Just a few questions, and if you're not the one to answer them, Mr. Cummins, just let me know.

In your Exhibit 3, the structure map, that really -- Does this define the reservoir?

A. No, sir, it does not. This is simply a map on top of the Strawn porosity of the wells that I have logs available for in the South Big Dog-Strawn Pool.

Q. A lot of these reservoirs are one- or two-well reservoirs, in this -- Even though it's all within the South Big Dog-Strawn Pool, a lot of the reservoirs are just being drained by one or two wells, are they not?

A. A lot of the reservoirs are being drained --

Q. A lot of the -- You know in the past, they've been referred to at the OCD as porosity pods?

A. Yes, sir.

Q. Aren't there several of those in the South Big Dog-Strawn Pool?

A. Yes, there are.

Q. Looking at your Exhibit 3, the Runnells "ASP" Well Number 3, is that well completed in the top or the bottom of the Strawn porosity?

A. To my knowledge, I believe that is completed in

the top part. Most of our porosity was found in the upper part of the Strawn.

A. Did the lateral go into the bottom part of the Strawn at all?

A. Yes, we directed the wellbore lower stratigraphically into the section without finding any porosity.

Q. Is that lateral wellbore completely within the east half of the northeast quarter of Section 11?

A. The lateral, based on the directional surveys, shows the surface location 1980 from the north, 660 from the east. The bottomhole location, 682 feet from the north and 1186 from the east. The answer is yes, it is restricted to the east half. It is within 135 feet of the next standup 80 to the west.

Q. What is the most productive part of that wellbore? Is it at the end, at the bottomhole location? Is it closer to the vertical part?

A. It is productive -- it is mostly productive throughout -- It is productive throughout the entire lateral. Not all the way into the end, but I could not answer that question without having the other data in front of me, such as the mudlog, without -- I couldn't answer that with 100-percent accuracy.

Q. Okay. You're saying throughout, but not so much

toward the end?

A. It's not right at the very end of the reservoir, no. We took the lateral down and we didn't find any porosity deeper, stratigraphically deeper.

Q. What was the initial pressure in that well?

A. That, sir, I do not know. We'd have to have the engineer answer that question.

Q. What are the current producing rates on that well?

A. That also I am not aware of.

MR. BRUCE: That's all I have, Mr. Examiner.

MR. CARR: Mr. Catanach, I have some redirect.

EXAMINER CATANACH: Go ahead.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Cummins, you testified that the spacing for the pool is 80-acre spacing; is that correct?

A. Correct.

Q. How many acres are dedicated to the Runnells Number 3 Well?

A. 160 acres, two 80-acre proration units.

Q. When the well was originally proposed by Yates in a C-102 filed, what was the proposed bottomhole location?

A. The proposed bottomhole location was 700 feet from the north, 1000 feet from the east.

Q. And what was the actual bottomhole location?

A. 682 feet from the north and 1186 feet from the east.

Q. So lateral was actually longer than initially proposed; is that right?

A. That's correct.

Q. And is farther to the west than initially proposed; is that right?

A. Correct.

Q. Prior to the drilling of the horizontal portion of this well, were you contacted by the Oil Conservation Division concerning the horizontal portion of the wellbore?

A. Yes, sir, I was.

Q. And what were you advised?

A. We were advised that as long as the bottomhole location of the lateral encroached upon the standup 80 to the west, closer than 330 feet, we would capture that other standup 80.

Q. Were you also advised that if it deviated closer to the east or farther from the other spacing unit than proposed or stopped short of the proposed bottomhole location and, in fact, only an 80-acre standup unit could be dedicated?

A. That's correct.

Q. But it didn't deviate to the east; it deviated to

the west, did it not?

A. That's correct.

Q. And it went farther than that location, did it not?

A. Yes, it did.

MR. CARR: That's all I have.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Cummins, you mentioned in a response to one of the questions that there are several porosity pods in this pool?

A. Yes, there are several porosity pods within the South Big Dog-Strawn Pool, as well as the other Strawn pools out here in the area.

Q. Is it your opinion that these are all in communication?

A. Not necessarily. I believe the engineering testimony will be better able to address that, based on some pressure information.

Q. You were here for the case that was presented this morning. As a matter or fact, you testified. Is it your opinion that -- In your opinion, is there any communication between the South Big Dog-Strawn and the previous -- the case we heard, the Shoe Bar, Northwest Shoe Bar-Strawn Pool?

A. Between the South Big Dog-Strawn and the Northwest Shoe Bar-Strawn?

Q. Yes.

A. Right. Yes, I believe so.

Q. Do you know at this point how many different producing porosity pods there are in the South Big Dog-Strawn?

A. No, sir, I do not.

Q. Well, what kind of barriers are there to these being in communication with each other?

A. They appear to be facies changes or selective porosity distribution that do not hook up all of the pods continuously, although some of them appear to be in communication. They may not all be, but some could be.

EXAMINER CATANACH: Okay, I have nothing further of this witness.

MR. CARR: That concludes my presentation with this witness. We would call David Pearson.

May it please the Examiner, we would request that the record reflect that Mr. Pearson testified in the previous case, that his credentials as an expert in petroleum engineering were accepted and made a matter of record at that time.

EXAMINER CATANACH: The record shall so reflect that, Mr. Carr.

DAVID PEARSON,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Pearson, are you familiar with the Application filed in this case on behalf of Yates Petroleum Corporation?

A. I am.

Q. Have you made an engineering study of the area which is the subject of the Application?

A. Yes, I have.

Q. Are you prepared to share the results of your work with the Examiner?

A. Yes.

Q. Would you refer to what has been marked for identification as Yates Petroleum Corporation Exhibit Number 5, identify that and review it, please?

A. Yates Petroleum Corporation Exhibit Number 5 is the summary of PVT data from the Runnells Number 3 horizontal well. If you refer to Exhibit 1, it's located in the northwest quarter of Section 11.

This exhibit shows the original -- the reservoir conditions at the time the PVT sample was collected. There's a bottomhole PVT sample that was collected while

the well was flowing. The flowing bottomhole pressure was about 3950 pounds. The saturation pressure or bubble-point pressure was determined to be about 3800 pounds. The initial GOR, solution GOR, at bubble point is about 2780, and formation volume factor is about 2.65, classifying it as a volatile oil.

Q. Can you summarize why you believe a higher gas-oil ratio is warranted in this pool?

A. Briefly, because you have started with a reservoir fluid that is at or above the gas-oil ratio, the statewide gas-oil ratio limit, and there's no way, then, to produce the wells in such a fashion as to not be in violation of the GOR limit unless -- and still be able to produce at your oil allowable.

Q. If you produce the oil allowable, do you, because of the characteristics of the product, overproduce the gas allowable?

A. That's correct. And my impression is that the statewide rules -- what you have is an unusual fluid that the statewide rules really weren't very well structured to address.

Q. Let's go to Exhibit Number 6. Would you identify that, please?

A. Exhibit 6 is a series of production plots. Basically what they are are the oil, gas, water and gas-oil

ratio, GOR plots, for all of the wells that are in the pool. I'll go through them fairly quickly because there are a number of them, but basically, the oil and the water read -- It's barrels of oil per month and barrels of water per month read off the left-hand scale, GOR and cubic feet per barrel and gas and MCF per month read off the right-hand scale.

And then you'll see drawn in on each of the plots two horizontal lines, a green one and a red one. And the green line is the oil allowable for that month, the monthly oil allowable, the red line is the monthly gas allowable.

And then you'll have to forgive me because I'm a little bit color-blind, but it's either a dark red or a black long dash and then short dash, and that's the GOR plot for the wells.

The first well is the Baer Number 2, located -- It's the northernmost well in the field. It was initially on production in early 1996; it's one of the first wells to be produced. The material points, I suppose, to take away from it is, you'll note that they, during the history of the well, have never overproduced either gas or oil allowables.

The next well was operated by Charles Gillespie, basically the same type of plot. You'll note it made a little bit of water during its life, and again they have

not overproduced either their oil or gas allowables.

The third plot is the Mobil State Number 1. It is an Amerind well and was the original well, the discovery well for the field, and had a discovery allowable for some period of time, so that's the reason for the overproduction of oil on that well.

The other thing that this is a particularly good example of and is material because it's the discovery well, the first well in the field, is, note the GOR behavior of the well. It is a fairly textbook example of what you'd expect for a solution gas drive reservoir without a large gas cap there. You start with a solution GOR, it comes down some as you're building a free gas saturation up to the critical gas saturation. Once you've exceeded the critical gas saturation, the GOR very rapidly climbs, and the oil production rates fall off a bit.

Further wells, another well operated by Amerind, Gallagher State Number 2, again, the kind of characteristic solution gas drive behavior.

One well operated by Yates Petroleum, that we drilled late into one of these pods. These wells that you've looked at so far all seem to be in the same porosity pod. This well was drilled late in the life and discovered the reservoir at about 1100 pounds. You'll note the GOR, the initial producing GOR, is substantially higher, and the

oil rates were significantly lower.

Second Yates well, same type of condition, actually discovered the reservoir at about 200 pounds lower pressure, has a much lower oil production rate, lower cum and a much higher initial GOR.

The following well is Townsend State Number 1, drilled by Ocean Energy. It has a short horizontal lateral and was relatively tight.

Amerind Fields 1 Y, basically a nonproductive well in the reservoir.

The Yates Runnells Number 3, the first lengthy horizontal well drilled in the reservoir. Material points to note, it has an allowable for two proration units. Gas allowable and oil allowable reflect that. It also has been produced within -- has not been overproduced.

The following plot is the Yates Shell Lusk Number 2. It's a vertical well. We have initially overproduced the well slightly in an oil rate and on the gas rate, and I believe that we are still overproduced on our gas production. We've made up the oil production, the oil overproduction, because it declined a little bit there. We've made it back up.

Finally, the other major horizontal well in the reservoir, Chesapeake Operating Company's Kala 12. It's located in the northwest quarter of Section 12, and that's

roughly a 3000- or 3200-foot horizontal, probably in the same porosity pod, if you will, if you like that terminology, as the Runnells Number 3. It was drilled, spud, almost immediately following our completion and production from the Runnells Number 3. The other material point to note from it, as typical out there, they overproduced the first month and then have made up their production and stayed within their allowable limits.

The final plot is the Ocean Townsend Number 5, vertical well. This well is located 330 feet north of the lease line in Section Number -- I believe it's Section 2. Material features to note on this plot, this well was drilled shortly before the Runnells Number 3.

The discovery pressure in this well -- we have an interest in the well, or -- I'm not sure we have an interest in the well, strike that. We had exchanged data and had the DST from the well, discovered the reservoir at about 4100 pounds at a time when the wells not too far to the north of it were at about 900 pounds. It had then -- They immediately upon production began to overproduce and then made up their production pursuant to request from the OCD. Once they had made up the production, you'll note that they began to overproduce the well again and have since then, basically up until about two or three weeks ago.

Also, you'll not that they're overproduced on their gas allowable.

Q. Mr. Pearson, you testified that the Runnells Number 3 well was not overproduced.

A. That's correct.

Q. Could this well produce more than the allowable?

A. Yes, we have kept it choked back to meet the gas allowable.

Q. So you're restricting the oil production on the well so that you can meet the gas allowable?

A. That's correct.

Q. And this is a horizontal wellbore?

A. That's correct.

Q. And you have a higher allowable because you've dedicated 160 acres to the well?

A. That's correct.

Q. The other horizontal well is the Chesapeake Kala well?

A. Kala Number -- Yeah, I can't remember. It's Kala 12.

Q. And that's in the northwest quarter of Section 12?

A. That's correct.

Q. Does that well also have 160 acres dedicated to it?

A. That's correct.

Q. And is it your understanding that they are also choking it back and restricting it to stay within the allowable limits?

A. That's correct.

Q. In your opinion, do we have a rate-sensitive reservoir here?

A. No, I don't believe we do.

Q. In your opinion, will approval of the requested increase in the gas-oil ratio cause waste of reservoir energy?

A. No, I don't believe that it will.

Q. Does Yates have any further development plans for the pool?

A. Actually, yes, we do. Yes, we do.

Q. Do you anticipate that if the gas-oil ratio is increased to the requested 6000 to 1, that this would resolve the problems that are being faced by Yates and other operators in dealing with overproduction of gas while trying to meet their oil allowable?

A. Yes, I think it would.

Q. Can you just summarize for the Examiner your conclusion?

A. Basically, you have a volatile oil reservoir that is a solution gas drive reservoir. Due to the difficulty

in predicting where the porosity is going to be, and specifically where the top of porosity is, we can predict with a fair degree of accuracy where the top of the carbonate interval is, but it's not real obvious from the pressure data that we have available to us and from the geologic and geophysical data, which wells are in the same pods and where the top of the porosity would be. So it's difficult to predict where the gas cap would tend to form.

And because of that, in combination with the fact that we have a very volatile oil, we can't manage our operations in such a fashion as to stay -- to avoid producing, or avoid to the degree that it's economically feasible, producing a free gas phase. And as such, we're having to reduce our oil production, in some cases relatively significantly, to stay within the casinghead gas allowable.

Q. Mr. Pearson, were Exhibits 5 and 6 prepared by you or compiled under your direction?

A. Yes, they were.

MR. CARR: May it please the Examiner, at this time we would move the admission into evidence of Yates Petroleum Corporation Exhibits 5 and 6.

EXAMINER CATANACH: Exhibits 5 and 6 will be admitted as evidence.

MR. CARR: And I have nothing further of Mr.

Pearson.

EXAMINER CATANACH: Mr. Bruce?

MR. BRUCE: Just a few questions.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Pearson, your Exhibit 5, the original reservoir pressure of 4150, would that be a virgin reservoir pressure?

A. Yes, it varies a little, you know, depending on the datum that people measured it at, but that is our interpretation, a virgin reservoir pressure.

Q. Do you have any pressure data after -- When was this? What was it? 1999?

A. Oh, it was -- That's the pressure that was measured immediately on completion of the Runnells Number 3. While we were building the production facilities out there, you know, we ran the tubing packer and ran in with a gauge and ran a buildup while we were constructing the production facilities.

Do you need the specific date?

Q. A month.

A. Okay. Let me look real quick. It would be probably in September or October of 1999. It was maybe two or three months after the Townsend 5 -- several months after the Townsend 5 pressure measurement.

Q. Okay. Do you have any data after this figure, pressure data?

A. Yes, I do.

Q. Do you have a current pressure on that well?

A. I think that data is -- the most recent data I have is probably six months old. The best guess I could give you would be 2500, 2600 pounds. I don't --

Q. Okay. And do you have a current GOR on this well?

A. Yeah, it's on the production plot. It would be -- The data is lagging behind somewhat because of the reporting procedures, but it's going to be -- Let me make sure I'm reading it correctly. Current GOR, I believe, is about 3200.

Q. Okay.

A. I'm sorry, no, the current GOR is about 1900 or 2000.

Q. And what is the current producing rate on the well, oil rate?

A. I don't have it. Current daily rate is about 780 or 800. The current monthly rate is about -- probably about 19,000 barrels per month.

MR. BRUCE: That's all I have, Mr. --

THE WITNESS: I have more confidence in the daily rate.

MR. BRUCE: Okay, that's fine. That's all I need.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Pearson, the Runnells well and the Kala 12 well, those are really the only two wells that are affected by this Application; is that correct?

A. No, the Runnells 2 -- Excuse me, the Runnells 3 and the Kala well would be affected directly in addition to the Schenck Number 1, is in the pool and is allowable-constrained. The Shell Lusk Number 2 is in the pool and is allowable-constrained. The Shell Lusk Number 2 is, in fact, overproduced as to its casinghead gas.

Q. Okay.

A. And I believe that the Townsend 5 might still be capable of producing at allowable and would be constrained, if they were producing within their casinghead gas limit, they would be constrained by it as well.

The wells to the north of that group of recent development, none of those are capable of producing near their allowable, either allowable gas or oil.

Q. Okay. Again, the Shell Lusk is overproduced?

A. I believe with respect to casinghead gas it's overproduced. It is not overproduced with respect to oil.

Q. And are any of the other wells, the Yates wells,

overproduced?

A. I don't believe so. In fact, I'm almost certain that there are not. I know they're not with respect to oil, and I'm almost certain that they're not with respect to gas.

Q. With the data that's available, can you determine -- Can you map these pods?

A. I don't think with the data that's available today. In my opinion, what I think it would require would be a cooperative agreement amongst all the operators to shut in simultaneously and measure their pressures so we could determine which of the wells are, in fact, in pressure communication.

And it's important to note that that would include wells that are not annotated on Exhibit 1. It would include the Runnells Number 2 that we operate to the south, both of the Jones wells that we have down there, and two or three Arrington wells that are in Section 14 farther to the south.

And to date we have not been able to reach an agreement about doing that.

I have pressure data that would show -- that I feel like, that I have confidence in, that I can show part of the wells are in the same pod, but there's other data that is equivocal that could put them in different pods.

I think the wells that are in question, Townsend 1 and all the wells north of it, are clearly in something separate. The question comes with the wells farther to the south.

Q. So you can't say that the five wells south of the Townsend 1 are in the same pod?

A. No, and I don't believe that they are. I think there's at least two there.

Q. At least two pods?

A. Yeah, and I have some evidence to support four.

Q. And you don't believe, either, that these two pods would be in communication?

A. No. I believe that the two pods are not in pressure communication. And I have fairly strong data to support that.

Q. So the PVT data that we're relying on from the Runnells Number 3 wouldn't necessarily translate or be applicable to the other pod?

A. It may not be. There's a lot of other evidence: the gas properties of the produced gas from the wells, the API gravity and color of the oils that are being produced from the wells.

The PVT data -- I have a lot of confidence, and I think I have the pressure data to show definitively that the Runnells 3, the Runnells 2, and probably the C.O. Jones

Number 2 are in the same pressure container.

I don't have any pressure data from Chesapeake, but I have anecdotal reports that would suggest that they're in the same pod with the Runnells 3, and our geology picture looks like that it would be.

I have a lot of data to support the Big Flat Number 2 and C.O. Jones Number 2, I have, I think, definitive data to show that those two are not in the same pressure container, and I think there's definitive pressure data to show that at least two of the four Arrington wells in Section 14 are in a separate pressure container from either Big Flat Number 2 or from C.O. Jones Number 2, the Jones-Runnells pod, if you will.

Q. In the absence of PVT data from each of the producing pods, how are we to make a determination that an increase in GOR is not going to affect that particular pod that we don't have PVT data for?

A. Would you repeat your question? I was thinking of -- I didn't listen all the way through that.

Q. Well, I'm not sure that you can use that one piece of PVT data that you have to establish that each of these pods should be increased to a 6000-to-1 GOR.

A. Right. What I would do, again, would be tie this PVT data to some type of a correlation, which it ties nicely with some volatile oil correlations, and then

compare the properties that are easy to measure, that you would use to go into the correlations for the wells that you think might not be in the same tank, and use that sort of as a quality control check of, is this representative, should this be representative?

When you go into a correlation, this PVT sample fits okay with what you see for those other wells, fits fairly well with what you see for the wells that I don't think are in the same pressure tank. I mean, logically you might want another sample. You know, it's not that uncommon of a practice to try to extrapolate and try to get the most value out of your PVT samples.

Q. Well, are you saying that we should determine which of the wells are in this particular pod that you've got the PVT data for? Is that what you're suggesting?

A. No, I don't think that we should. I think that the fluid properties are relatively consistent through all of the pods. And in fact, if you want, we can go through and take the time and look at each of the production plots and see if the initial GORs and things compare relatively well.

And that's the type of analysis I would go through, in addition to asking if I just took things I normally measure, API gravity, gas gravity, gas composition and looked into a correlation, that it give me properties

that are similar to this PVT -- the actual measured PVT sample were. The answer to that was yes, that it did a reasonably good job of predicting it.

And then I have those measurements in other wells that I think are in a different pod, and they are consistent. The biggest bust occurs over at the Big Flat Number 2. It has an exceptionally high GOR. And at the time that it was drilled and completed, it was at 4100 pounds, when the C.O. Jones Number 2 was at 3100 pounds, and there's 1200 feet of separation between those two wells. I mean, it's fairly difficult to construct a picture out here that is -- the rules of thumb you normally go by. There's clearly a lot of things happening rapidly.

Q. Well, all of the data that you've analyzed, are you able to say that a 6000-to-1 GOR would apply to each of these pods, would not be detrimental to each of those pods?

A. Yeah, I think that's correct. The difficulty -- It's a difficult question for me to answer, because you would obviously prefer to have had a situation where you could tell where the gas cap was going to be and to complete the well away from that gas cap.

In the absence of data that will let me predict where the gas caps are going to form and try to complete the wells in such fashion as to not be in the gas caps, and producing the free-gas phase, I'm not concerned that 6000-

to-1 GOR is going to let me blow a significant amount of energy out of the reservoir in the gas phase. I can answer that unequivocally.

Whether or not, if I went back and I -- whether or not there are procedural things I can do with subsequent wells that we're drilling, maybe I could do a little better. The horizontal wells, obviously, are going to have fewer cusping problems than the vertical wells. But the nature of the way the spacing works out here isn't necessarily going to allow you to drill all those as horizontal, nor is it necessarily economic to drill them all as horizontal wells.

Q. Well, I'm basically concerned with the prevention of waste and the reduction in ultimate recovery from these reservoirs. And is it my understanding that a 6000-to-1 GOR would, in fact, not cause that, a decrease in ultimate recovery?

A. No, I don't think that the 6000-to-1 GOR -- if you changed it from 2000 to 6000, I don't believe that it will materially impact the ultimate recovery.

Q. Of any of these pods?

A. Of any of these pods. And you see that from the wells that have had much longer lives. These wells are going to go to very high GORs later in their life. And the real question is whether we accelerate the oil production

somewhat by allowing us to produce them after oil allowables, or whether we're constrained by these gas allowables and therefore produce the oil at a lower rate. I don't think there's real rate sensitivity to how much gas is going to come out.

EXAMINER CATANACH: Okay, I think that's all I have. Any other questions of this witness?

MR. CARR: No further questions.

EXAMINER CATANACH: Okay, then this witness may be excused.

MR. CARR: And that concludes our presentation in this case.

DEROLD MANEY,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name for the record?

A. Derold Maney.

Q. Where do you reside?

A. In Houston, Texas.

Q. Who do you work for and in what capacity?

A. I'm a landman for Ocean Energy Resources, Inc.

Q. Have you previously testified before the Division?

A. Yes, I have.

Q. And were your credentials as an expert accepted as a matter of record?

A. Yes, sir.

Q. And are you familiar with the land matters involved in this Application?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Maney as an expert petroleum landman.

MR. CARR: No objection.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Maney, to be as quick as we can, what is Exhibit 1?

A. It's a land plat that -- in blue, the outline of the South Big Dog-Strawn unit, and it has the Strawn producing wells in there, it lists the operators.

Q. And notice was given to all operators in the Big Dog-Strawn Pool, the South Big Dog?

A. Yes, yes.

Q. Really, just a couple more things off of this. In yellow on Exhibit 1 is Ocean Energy's leasehold interest, is it not?

A. Yes, it is.

Q. Looking at Section 2, am I correct that while this is a tall section, but Lots 15 and 16 in the southeast

quarter is one single State of New Mexico lease?

A. Yes, it is.

Q. And it has common working, royalty and overriding royalty interests throughout?

A. Yes, yes.

Q. Okay. And for the record, Ocean does concur in an increase in the GOR to 6000 to 1 as requested by Yates?

A. Yes, we do.

Q. Okay. And next, Exhibit 2 is the affidavit of notice giving notice of Ocean's Application to all operators in the pool?

A. Yes.

Q. Okay. Were Exhibits 1 and 2 prepared by you or under your supervision or compiled from company business records?

A. Yes, they were.

Q. And in your opinion, is the granting of Ocean's Application in the interests of conservation and the prevention of waste?

A. Yes, it is.

MR. BRUCE: Mr. Examiner, I'd move the admission of Ocean's Exhibits 1 and 2.

MR. CARR: No objection.

EXAMINER CATANACH: Exhibits 1 and 2 will be admitted as evidence.

Any questions, Mr. Carr?

MR. CARR: No questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Maney, the other operators in this pool are just Yates --

A. Amerind, Yates, Chesapeake and Gillespie.

Q. Have you spoken to any of the other operators in the pool about your Application?

A. No, I haven't.

Q. Have any of them expressed any concern to you about your Application?

A. No, I have not had any conversations with anybody yet.

EXAMINER CATANACH: Okay, I have nothing further.

MR. BRUCE: Mr. Examiner, I was contacted by Gillespie -- as you know, I often have contact -- and they have no objection to Ocean's Application.

EXAMINER CATANACH: Okay, that's all I have.

BRIAN E. BLOME,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name for the record?

A. Brian Blome.

Q. Would you spell the last name for the --

A. B-l-o-m-e.

Q. Where do you reside?

A. I reside in Denver, Colorado.

Q. Who do you work for?

A. Ocean Energy.

Q. What's your job with Ocean?

A. I'm a senior geologist for Ocean Energy.

Q. Have you previously testified before the Division?

A. No, I have not.

Q. Would you summarize your educational and employment background for the Examiner?

A. I graduated from the University of Nebraska in 1974 with a bachelor of science degree in geology. I subsequently have been in industry for 26 years, beginning in 1974 with Aminoil USA, Inc. I worked for them for five years.

I then was an independent for the following seven years and since that time have had employment with BWAB, Inc., also a Colorado company, and for the last seven years I've been employed by Ocean Energy, Inc., as senior geologist working the Permian Basin.

Q. Does your area of responsibility at Ocean include

Permian Basin?

A. Yes.

Q. And are you familiar with the geologic matters involved in this Application?

A. I am.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Blome as an expert petroleum geologist.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Blome, what is Exhibit 3?

A. Exhibit 3 is an isopach map of effective Strawn reservoir in what we call our Townsend area, and it encompasses the South Big Dog-Strawn area. It's at a scale of 1 to 1000, and it would be contoured on three-percent-or-greater porosity, what I would consider to be effective porosity.

And essentially what it comes out to be is a pod or distinct reservoir outlines that was formed by the use of seismic as well as subsurface well control.

Q. Okay, so it is based on well control as well as seismic?

A. Yes.

Q. And would it also reflect any pressure data that you may have?

A. It would reflect some pressure data, yes, where I have that data available.

Q. Looking at this, there's a number of porosity pods, as I call them, in this pool, are there not?

A. Yes, that would be the nature of the algal-mound-type rock that this is.

Q. Looking at -- Oh, on the south end, you do show that the Ocean Townsend State Number 5 is separate from the Yates Runnells "ASP" Well Number 3, do you not?

A. According to our geophysical and geological information, we see separation between the two pods.

Q. Looking at this, there's also this Gillespie State "D" Number 9. What is the status of that well?

A. That well I was not aware of the final outcome. I looked it up this morning. It is now a dry hole.

Q. In the Strawn?

A. In the Strawn.

Q. Okay. Another thing on this map, you show that the very end of the Yates Runnells "ASP" 3 well is really outside the effective porosity, also, do you not?

A. According to the geophysical interpretation we had, it looked like they would be running out of reservoir as they went north and that there would be an intermound facies or a tight facies that this map depicts.

Q. And it -- Well, it agrees with Mr. Cummins who said he didn't think the end of it was productive?

A. That would fit, yes.

Q. Okay. Let's move on to your Exhibit 4. What does that show?

A. Exhibit 4 is a type log. I used the Townsend State Number 5, Ocean Energy's well, in Section 2, the southern end of Section 2. It shows the Strawn section, where we picked the top of the Strawn, it shows a DST that we ran in here that encountered virgin pressure, and it also shows where we have perforated the well down in the bottom of the reservoir, which is common in this area to utilize gas expansion to help produce this reservoir. We prefer not to perforate too high in the section, as most operators do, when you have porosity development in the bottom of the reservoir like this, it's wise to produce it low.

It shows the initial potential we produced the well at, 535 barrels a day and 991 MCF. We have a cumulative production on that well of 277,000 barrels of oil and 576 MMCF, which would be million cubic feet. And current rate is 156 barrels of oil per day and 783 MCF.

And it roughly shows the effective rock that I feel is -- in red.

Q. One thing on this: You are perforated at the bottom, and I believe Yates is perforated at the top?

A. I believe in the Runnells well they only had the top of the porosity developed, so they were most likely to

have gone, and I do not know the exact orientation or true vertical depth of their porosity in their horizontal. But from verbal conversation and the Lusk well that is present, that they came out of, the porosity was developed near the top. And so I assume they are in the top also.

Q. Were Exhibits 3 and 4 prepared by you or under your direction?

A. Yes, they were.

Q. And in your opinion, is the granting of Ocean's Application in the interests of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd move the admission of Ocean Exhibits 3 and 4.

EXAMINER CATANACH: Exhibits 3 and 4 will be admitted as evidence.

Mr. Carr?

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Blome, let's look for a minute at Exhibit Number 3.

If I understood your testimony, looking at the Runnells Number 3 well, you concluded that the end of the horizontal portion of the wellbore was actually outside that pod that you've mapped; is that correct?

A. I tried to depict that as being near the edge of the reservoir, yes.

Q. Now, when you were picking this reservoir, what information did you rely on to actually map this reservoir?

A. I relied on 3-D seismic and the subsurface control.

Q. What was the smallest thickness that the seismic attribute could, in fact, detect or measure?

A. I don't really have a good answer for you on that.

I think we have an amplitude anomaly that we tried to map, and the edge of these reservoirs obviously can get into less than ten feet, and based on that I would say 10 feet, you could --

Q. Your seismic would detect an attribute or a thickness to ten feet?

A. Our geophysicist would have said he thought he could see close to ten feet.

Q. And so what we have here is a -- You've drawn the end of the reservoir where you might have ten feet of thickness; isn't that right?

A. That's approximately --

Q. And it might extend beyond that some distance --

A. It may --

Q. -- isn't that also correct?

A. -- slightly, yes.

Q. So the end of the horizontal portion of the well might actually be within the reservoir?

A. I would expect that the end of the horizontal is still in some kind of reservoir of some nature, but not as good as the beginning of the reservoir.

Q. When you were completing the Townsend Number 5 well, did you acidize the well, do you know?

A. I believe we did.

Q. And after you acidized the well, did you see a significant change in the producing capability?

A. I think it improved the production on the well, yes.

Q. Isn't that possibly because you had communicated producing intervals within that reservoir?

A. I would assume that it enhanced the reservoir to some degree.

MR. CARR: That's all I have.

THE WITNESS: I don't know if it went high or low.

MR. CARR: That's all I have.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Blome, which wells does Ocean have a problem with overproduction? Do you know?

A. Currently right now, we have overproduction in the Townsend 5 well.

Q. Is that the only one?

A. That's the only one to my knowledge.

Q. Now, did you use 3-D seismic to identify each of these pods?

A. Yes.

Q. All the ones you've shown on Exhibit 3?

A. Yes.

Q. And can you say with some degree of certainty that the pod that the Townsend 5 is in is separate from the Runnells Number 3 pod?

A. I can say with very much certainty that it's separate.

Q. And similarly, is it also isolated from any of the pods to the north of the Townsend State 5?

A. I believe so.

Q. You don't have any data on the well to the east, the Chesapeake Kala 12. Is there a reason why you didn't supply that data?

A. I've never seen the log on that well. I assume, being a horizontal well, it's not logged.

Q. Okay. So would you assume that pod to be in a different pod than the Runnells --

A. I'm not aware of that. That's at the edge of our

survey over there, and we really don't have a good --

Q. You can't say --

A. -- full stack. Yeah.

EXAMINER CATANACH: I think that's all I have of this witness at this time.

REDIRECT EXAMINATION

BY MR. BRUCE:

Q. A couple -- One follow-up, Mr. Blome, regarding that Chesapeake well.

Does Ocean have any seismic over there in Section 12?

A. It would be on the edge of our data right there.

Q. Okay. You didn't have any rights to go in and shoot seismic on that?

A. I do not know that answer.

Q. And then finally, did Ocean contact Yates about conducting simultaneous pressure buildup tests?

A. Yes, when we were notified about the overproduction, we then asked Yates if they would shut their well in and take a pressure buildup at the same time we were shutting ours in to try to determine if there was any communication.

And they have not, to my knowledge, shut their well in.

MR. BRUCE: That's all I have.

BRYAN SAUNDERS,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Will you please state your name and city of residence?

A. Bryan Saunders, Houston, Texas.

Q. Who do you work for?

A. Ocean Energy.

Q. What's your job at Ocean?

A. I'm a reservoir engineer there.

Q. Have you previously testified before the Division?

A. No, I haven't.

Q. Would you summarize your educational and employment qualifications for the Examiner?

A. Yes, I graduated with a bachelor of science degree in civil engineering in 1980. I worked for Halliburton for about two years. I then went back to grad school and completed course work in petroleum engineering. I went to work for Mitchell Energy at that point for about six years, then moved back to College Station and went to work for S.A. Holditch and Associates, Petroleum Engineering Consulting Company.

From there, I went to work for Kerr-McGee and then on to Seagull Energy, which subsequently through a merger became Ocean Energy.

Q. And your job at Seagull and Ocean has been as a reservoir engineer?

A. Yes, it has.

Q. And your area of responsibility now includes southeast New Mexico?

A. Yes, it does.

Q. And are you familiar with the engineering matters related to this Applications?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Saunders as an expert reservoir engineer.

MR. CARR: No objection.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Saunders, let's talk about the reservoir a little bit. What is Exhibit 5?

A. Exhibit 5 is a copy of pressure tests that we ran on the Townsend 5 well. There are actually two tests. One had the DST on initial -- while the well is drilling. And then a subsequent test, March, 1999.

What we see on the first page is just the header for that test, just a cover sheet for it, to identify the well and the date. The second test [*sic*] is a well

summary, or the test summary. And if you'll look down at the bottom of the data, period 2, if you'll look at the end pressure data, which is the sixth column over, you'll see a pressure of 4109 p.s.i. We're using that as the initial reservoir pressure for this well.

On the next sheet, which is the third sheet, which is also a header sheet or a title cover for the second test, the test of March, 1999.

The fourth and last page is a summary sheet of that test. And if you'll look at the time of day and date, March 4th, 7:55, you'll read over pressure at depth, p.s.i.a. 3009 p.s.i. That's what we feel like the pressure was at that time.

Q. So in -- what is this, about six months' time? -- pressure in the Townsend Number 5 well had dropped from about 4100 to about 3000 p.s.i.a.?

A. Yes, that's correct.

Q. And then about six months later when Yates completed its Runnells "ASP" Well Number 3, they still had a 4100 p.s.i. bottomhole pressure in that well?

A. Yeah, around there, I believe, from previous testimony.

Q. What does that indicate to you with respect to those two wells?

A. I would tend to believe that those wells are not

in pressure communication.

Q. And that would support Mr. Blome's geology on his isopach map?

A. Yes, it would.

Q. Let's discuss a little bit of Townsend Well Number 5 history. Could you identify Exhibit 6 for the Examiner?

A. Exhibit 6 is a daily production curve with curves showing daily production of oil, gas and water. We've also calculated the gas-oil ratio for the daily rates on it. The legend is at the bottom of the curve.

I'd like to draw attention to the GOR, which are the blue triangles. They're holding together relatively well early in the life of the well, around 1500, a GOR of 1500 SEF per barrel. You'll note that they assume a gradual increase, and that increase is fairly consistent until the period around March of the year 2000, where the well was shut in. And then following that, the GOR is much higher.

Q. Let's look at that most recent data up close. Why don't you go on to Exhibit 7 and describe what that shows for the Examiner?

A. Exhibit 7 is basically the same data but in an expanded plot where we can see the activity of the well at a higher -- a better degree of detail.

We were contacted to shut in the well more recently, in the March time frame, and that's what that area around there shows. We shut in the well to get ourselves back in balance with the production. We were then allowed to resume production at a rate of about 150 barrels per day.

And what we gather from this is that you can notice that the GOR is relatively stable prior to this shut in. Following that, the GOR is much higher and is much less stable at this point.

Q. Let's go into this a little bit. When you tried to bring the well back on, did you have problems doing that?

A. Yes, we did, we had to spend a fair amount of time swabbing to get the well to return to production, and even then it was very difficult to get back up.

Q. Also, is it fairly hard to control the rate of production at that lower rate?

A. Yes, you can look at the curve, and it shows a fairly wide variation in the oil production rate. So yes, I'd say that the rate is more difficult to control at that level.

Q. Okay. And as you said, you've noticed a -- well, quite a substantial increase in the GOR producing at those lower rates?

A. Yes, we have.

Q. So what does that tell you about producing at the lower rates, what this might do to the reservoir?

A. Well, we feel like that it's not -- we would like to try to -- We feel like with the higher GOR like that, that we're not producing in a stable situation and that we'd like to have an opportunity to find a more reasonable or more efficient rate that would allow the well to return to its previous stable GOR history.

Q. In other words, if you have to reduce the well, say, to a hundred barrels or 50 barrels a day, the GOR might go up higher?

A. That's correct.

Q. And if you then produce too much gas, you'd have to further restrict oil production?

A. That's correct.

Q. And the GOR could go up even higher?

A. Yes, if the trend continues like it is showing it to be right now.

Q. Okay. Do you think that's the best way to manage the reservoir?

A. No, I don't.

Q. And again, if you have to shut in the well completely to make up overproduction, do you face the same risk of having trouble bringing the well back on line?

A. Yes, that is a concern of ours, that if we do have to shut in the well, it may be more difficult to bring back on line.

Q. Now, as part of Ocean's Application it's asking that overproduction be canceled.

Do you see any -- Was the reservoir harmed by the overproduction?

A. No, sir, I don't believe it was.

Q. Do you see any harm to any offsets if the overproduction is canceled?

A. No, sir, since we're producing essentially in our own pod without any competitive drainage from other wells, I don't see that it could harm other offset wells.

Q. If the OCD says you have to make up the overproduction, roughly what rate would you like to be able to make that overproduction up at?

Would you like to be able to continue to produce the well?

A. Yes, we would, and we'd like to try to get that rate closer to where we were before, or at least to find a level that we could produce at a stable GOR and oil rate.

Q. And to prevent harm to the reservoir?

A. Yes.

Q. In your opinion, is the -- increasing the GOR, as Yates requested, to 6000 to 1 in the interests of

conservation and the prevention of waste?

A. Yes, I believe it is.

Q. Will an increase in the GOR harm any other wells in this pool that aren't producing at top allowable like the Yates well?

A. Not if they're not producing in pressure communication.

Q. In your opinion, is the cancellation of the overproduction, or at least allowing you to make it up at a lessened production rate -- will that harm any offsets?

A. No, it won't.

Q. Were Exhibits 5, 6 and 7 prepared by you or under your supervision?

A. Yes, they were.

Q. And in your opinion, is the granting of Ocean's Application as amended in the interests of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, it is.

MR. BRUCE: Mr. Examiner, I'd move the admission of Ocean's Exhibits 5, 6 and 7.

MR. CARR: No objection.

EXAMINER CATANACH: Exhibits 5, 6 and 7 will be admitted as evidence.

Mr. Carr?

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Saunders, if I understand your testimony, you believe that the Townsend Number 5 well is completed in a separate pod or a separate reservoir?

A. Yes, sir.

Q. And in reaching that conclusion you have looked at pressure information --

A. Yes, sir.

Q. -- I assume?

And you've concluded that based on a review of pressure information between the Number 5 and the Runnells 3; is that correct?

A. Yes, sir.

Q. Have you also analyzed pressure information on the Shell Lusk Number 2 in the northwest of Section 11?

A. No, sir, I have not.

Q. And if that information shows that, in fact, there was pressure communication with that well, then you wouldn't have a separate reservoir, would you?

A. If they were in pressure communication.

Q. Now, if we take a minute, I'd like to just look at the history of this well. The well came on first production when? In late 1998?

A. Yes, sir.

Q. And it immediately became overproduced, did it not?

A. Yes, sir.

Q. And in early 1999 or even late 1998, you were directed by the Oil Conservation Division to get back in balance; is that not correct?

A. I believe so, sir.

Q. And so if we look at your Exhibit Number 6, we see from a period -- well, in late 1998 and early 1999 where we had the oil production line drop and remain fairly constant, you actually were curtailing the well at that point; is that not correct?

A. Yes, sir.

Q. And you got the well back in balance?

A. Yes, sir.

Q. And during that period of time you didn't experience any problems with the gas-oil ratio in the well, did you?

A. No, sir.

Q. And then once you got back in balance, you just started producing the well at unrestricted rates again, did you not?

A. Unrestricted, sir?

Q. You weren't doing any thing to curtail the rate, were you? You were producing the well at what it would

flow?

A. I don't believe so, sir, I believe --

Q. How were you restricting the production?

A. On choke, I believe, sir.

Q. And you know, with the well on choke, that you were producing in excess of the allowable, did you not?

A. Yes, it was being produced in excess.

Q. And it's fair to assume that Ocean was aware of that; isn't that fair to assume?

A. Yes, sir.

Q. And in fact, the well became 54,000 barrels overproduced, did it not?

A. Yes, sir.

Q. And you didn't do anything to curtail that or to address that continuing increase in overproduction until you were directed by the OCD to shut the well in?

A. I believe so, sir.

Q. And so you now have brought the well back at a lower rate, and you're concerned that you were having some problems with the gas-oil ratio; is that fair to say?

A. And the oil rate, yes, sir.

Q. And the oil rate?

A. Yes, sir.

Q. Now, what is the cumulative production on this well to date?

A. I believe it's around 278,000 barrels of oil.

Q. 278- --

A. -- thousand barrels of oil. I'd have to get the gas rate for you.

Q. And you're overproduced at this time by about how much?

A. About 50,000 barrels, I believe.

Q. So a fifth of the production from this well is overproduction?

A. Yes, sir.

Q. And you're asking to be allowed to make it up at some higher rate than what you're currently authorized to do?

A. Yes, sir.

Q. Now, you're assuming that, as you testified, that you're in a separate reservoir?

A. Yes, sir.

Q. Have you done volumetric calculations on the pods in this -- that are depicted in your geological interpretation of this reservoir?

A. No, I have not.

Q. You haven't established recovery factors?

A. No, sir.

Q. The Townsend well came on production actually ahead of both the Runnells Number 3, the well to the south

and east of it, did it not?

A. Yes, sir.

Q. And it also came on production earlier than the Runnells Number 2, which is due south of it?

A. Okay.

Q. Those two Runnels wells have produced larger volumes, have they not, than the Townsend to date?

A. I would have to look at the curves.

Q. If they have, isn't it strange to you that -- wouldn't there be -- doesn't it seem odd to you that they're in smaller pods, as mapped?

A. It would all depend on what the net pay thickness is, you know.

Q. And so it would depend on the thickness of the pods as well as the lateral extent of it?

A. Yes, sir.

Q. If you are in a separate reservoir, the only concern you would have about being required to make up this 50,000 barrels of overproduction would be a rate -- to establish a rate where that could be made up without damaging the reservoir; isn't that right?

A. Yes, sir.

Q. And it is your intention, if you are required to do that, to make up the 54,000?

A. Yes, sir.

Q. What you're asking is just to be excused from that; isn't that right?

A. Yes, sir.

Q. And the overproduction was accumulated while you knew you were overproducing the reservoir but didn't further curtail it?

A. Yes, sir.

Q. Do you know that other operators in this reservoir are, in fact, curtailing their production to stay within that allowable?

A. I've heard testimony to that today.

MR. CARR: That's all I have.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Saunders, you testified on the pressure data that you have that shows that the Runnells Number 3 is not in the same pod as your well?

A. Yes.

Q. Are you relying basically on your geologic interpretation that this pod is separate from the other pod, say, to the north, or do you have any other pressure data?

A. I don't have any other pressure data to work out those. But in combination with the wells to the south and the interpretation so far, we have fairly good confidence

in the interpretation.

Q. So you believe that that pod is isolated and that the Townsend Number 5 is the only well producing from that pod?

A. Yes sir.

Q. This well is flowing, right?

A. Yes, it is.

Q. Approximately how long has it been since you started producing it again, after it was shut in for the extended period?

A. About two weeks.

Q. Do you anticipate that that production -- If you kept on at the same rate, do you think that would stabilize?

A. It's hard to say right now There's a lot of variability in the daily GOR values. The trend is not good, and that's what concerns me right now. The trend is a much steeper and it's at a higher level than where we were before. And to have that significant or drastic of a change just following the shut in is concern to me.

Q. At what rate would suggest would you suggest that we authorize you to produce this well?

A. I believe somewhere close to where we were before, but somewhere in the neighborhood of two-thirds of the allowable, which would put us around 300 barrels a day,

I believe.

Q. I'm sorry, around 300 barrels a day?

A. Yes.

Q. That's what you would recommend?

A. Yes, sir.

Q. And the allowable is currently 445; is that right?

A. Yes, it is.

Q. So that would take you about a year to make up?

A. Yes, sir.

Q. Do you have an opinion as to the -- The 6000-to-1 GOR, do you have an opinion as to whether that should be applicable to all of the other pods in this pool?

A. Assuming that the pods have the same type of oil within this producing interval, I would say that's reasonable to apply it to all the pods.

Q. You say assuming it has. Have you not seen data to indicate that it does?

A. I've seen some variability in the data, but I think that it's relatively consistent, that a lot of these wells are high-GOR wells and will ultimately approach that in their life.

Q. Just double-check on the -- the pressure data that you got from the -- When was the Runnells Number 3 drilled, do you know? Or when did they take their pressure

data?

A. I believe it was in May of 1999.

Q. May of 1999?

A. Spring of 1999. I don't recall now what the testimony was on that.

MR. BRUCE: Mr. Examiner, I think Mr. Pearson testified that that pressure point was taken in September of 1999. You can correct me if I'm wrong.

Q. (By Examiner Catanach) And the pressure, the 3009 p.s.i. that you've got in the Townsend Number 5, was taken March 4th of 1999?

A. Yes, sir.

MR. CARR: Mr. Examiner, the Runnells pressure data was in May of 1999.

EXAMINER CATANACH: May of 1999?

MR. CARR: Yes, sir.

Q. (By Examiner Catanach) Is the Townsend Number 5 going to be the only well drilled to that porosity pod?

A. Yes, sir.

Q. And in your opinion, it's going to drain that entire structure?

A. Yes, sir.

Q. Now, do you believe this is a solution gas drive reservoir?

A. Yes, sir, I do.

Q. Any water drive at all?

A. We haven't seen any evidence in the pressures. If there is, it's very limited, and we haven't noticed it in the pressures, no evidence of pressure support.

EXAMINER CATANACH: I believe that's all I have.

MR. CARR: Could I ask just a couple of follow-up questions?

EXAMINER CATANACH: Yes.

MR. BRUCE: And I have too.

MR. CARR: Go ahead.

REDIRECT EXAMINATION

BY MR. BRUCE:

Q. Mr. Saunders, the Examiner asked some questions about any possible connection to the wells to the north. Based on the data you've seen, the Townsend Number 5 is clearly in a different porosity pod than the Townsend Number 1, the Ocean directional drill, is it not?

A. Yes, sir.

Q. And I don't know if you have a map in front of you, but there are three dry or noncommercial wells to the north northwest of the Townsend Number 5, are there not, that were drilled deep enough to test the Strawn?

A. Yes, they penetrated below that depth.

Q. So really to the north there's no connection whatsoever?

A. That's correct.

MR. BRUCE: That's all I have, Mr. Examiner.

EXAMINER CATANACH: Mr. Carr?

RECROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Saunders, you stated you thought an appropriate penalty on the well, if, in fact, you were able to make up with the overproduction over a period of time, would be two thirds of the allowable.

A. Yes, sir.

Q. What was the basis for taking the two-thirds number? Is that arbitrary, or is there some technical basis for that?

A. The basis for it is somewhat arbitrary. What we'd like to do is approach the level that we were producing prior to the shut-in as closely as possible, because the well exhibited a very stable production rate and GOR at that time.

Q. And you don't know what, in between current rate and that rate, might correct this problem?

A. That's all the data we have at this point.

Q. Could, in fact, this problem be -- Do you believe the problem of the GOR you're experiencing is a reservoir phenomenon?

I mean, is it -- as opposed to -- Have you tried

to put smaller tubing in the well? Might that correct this problem?

A. I doubt it, sir. We're below bubble-point pressure.

Q. That wouldn't be -- You haven't tried that or considered that?

A. We haven't tried that, no, sir, because we don't believe that's --

Q. Does artificial lift or the other things that you might do to correct this problem before coming to the Division and asking them to just forget it?

A. Not that would be effective.

Q. In your work on the reservoir and the Townsend 5, could you tell me or do you know the current reservoir pressure in the Townsend 5?

A. I believe our latest pressure was around 1300 pounds.

MR. CARR: That's all I have.

FURTHER EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Saunders, prior to the well being shut in, you were producing at a rage of what, about 400 a day?

A. Yes, sir.

Q. Is that what the well is capable of producing?

A. I believe it's capable of producing more, because

we're still on choke, I believe. I'd have to verify that, but I believe we're still choked back.

Q. So you probably can produce more than 400?

A. You probably could produce more than that.

EXAMINER CATANACH: Okay, that's all I have.

Is there anything further of this witness?

MR. BRUCE: I have nothing further.

MR. CARR: Nothing further.

EXAMINER CATANACH: Okay, then this witness may be excused.

MR. BRUCE: That's the end of our presentation, Mr. Examiner.

EXAMINER CATANACH: Okay.

MR. CARR: I'm going to recall Mr. Pearson for just a second, if I could have a minute.

We'd like to recall Mr. Pearson for just a moment.

DAVID PEARSON (Recalled),

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Pearson, you were present, were you not, when Mr. Saunders testified?

A. Yes, I was.

Q. And when Mr. Saunders stated that the current reservoir pressure in the Townsend 5 was 1300 pounds --

A. That's correct.

Q. -- what does that tell you about the reservoir?

A. That Townsend Number 5 is very close to being or is near depletion, the reservoir that it's in.

Q. And what does that tell you about the rate at which they request to be able to produce the well during the point forward while they're -- quote, unquote -- making up the overproduction?

A. It would imply real strongly that they have limited reserves. They've produced 270,000 barrels and drawn the pressure down from 4100 pounds to 1300 pounds, and they have 55,000 barrels to make up. And the odds that they have another 200,000 barrels to produce out of the next 1300 pounds are pretty low.

Q. And in fact, that would suggest that perhaps penalizing the well to the extent recommended is not much of a penalty; is that not, in fact, true?

A. That would, in fact, be true.

Q. Now, have you made rough estimates of the recoverable estimates that could be contained within these pods?

A. Yes.

Q. And have you looked at the geological exhibit

presented by Mr. Blome?

A. Yes, I have.

Q. And what conclusions can you reach from the information you now have concerning the recoverable reserves in these pods?

A. That the -- I have done some volumetric calculations, and the recoverable reserves, based on about a 50-percent recovery factor from a pod roughly the size of the one that's there are on the order of 120,000 to 140,000 barrels of liquids.

Q. And you're saying the pod that is there. Which pod are you talking about?

A. I'm talking about the pod that's drawn on Exhibit 3, that the Townsend 5 is shown in being.

Q. And so what does that tell you?

A. It tells me that the pod that is there is the actual connected reservoir that the Townsend 5 is producing from has to be significantly larger than the isopach that's drawn on here.

Q. In your opinion, is it possible that the pod in which the Townsend 5 is located is, in fact, in communication with other wells in this area?

A. Yes, it is, I have some pressure data that might support that.

Q. Okay, would you review that, please?

A. I want to draw your attention to two things. One would be the Yates structural exhibit. I don't remember which exhibit number it was, 2 or 3. The structure map exhibit, it's probably 2 or 3.

Q. Okay, 3.

A. In Exhibit 3, you'll note that the highest well in the neighborhood or the most updip well in this neighborhood is the Yates Shell Lusk Number 2, and it's significantly updip of the Townsend Number 5.

In addition, I'd like to draw your attention to Yates Exhibit Number 6 -- it's the production plots -- and you'll note that on the Shell Lusk Number 2 production plot the GOR is higher than it is in any of the other wells that have been recently drilled into the reservoir.

Not only is it higher, but there's been a significant production decline not caused by choke changes on the data that's shown on here in Shell Lusk Number 2.

And finally, I have pressure data -- I don't know how to handle this. We have pressure data that has not yet been presented that shows there was significant drawdown at the time that the Shell Lusk Number 2 was completed, and the drawdown is inconsistent with the pressures that were observed in the Runnells Number 3.

Q. Based on your review of the pressure information and other data available to you on the reservoir, do you

believe it is fair to conclude that the Townsend Number 5 is completed in a separate, distinct reservoir, not in communication with any other one?

A. I don't believe you could conclude that.

Q. Do you have an opinion as to whether or not the production -- overproduction, should be canceled?

A. I don't believe that the overproduction should be canceled, because I believe that it is competitive with wells south of the lease line.

Q. Do you believe that permitting overproduction to be made up at the rate recommended by Ocean is, in fact, an effective penalty?

A. No, I don't, because I don't believe that the well is likely to produce enough -- that the remaining reserves to be recovered from the well are sufficient to allow them to produce and make up at the reduced make-up rate that they've asked for.

Q. Does Yates recommend that the request of Ocean for either cancellation or production at a two-thirds of allowable rate, do you recommend that that request be denied?

A. I do.

MR. CARR: That concludes my redirect of Mr. Pearson.

EXAMINER CATANACH: Mr. Bruce?

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Is Yates Petroleum prepared to shut in its wells, the Runnells "ASP" Number 3, the Runnells "ASP" Number 2, the Shell Lusk "ANB" Number 2 and any other wells in Section 11, together with Ocean Energy to prove whether these are in communication?

A. I believe that Yates, if we could persuade Chesapeake and Arrington to shut in their wells as well, I think that Yates would undertake that. I don't speak -- I mean, I can't --

Q. You're not committing yourself?

A. Well, I -- No, because it's not my decision to make. We have discussed that, and the difficulty has been that Chesapeake, particularly -- Arrington has indicated that they might cooperate with that, but Chesapeake at this stage of the game has not been very interested in participating in that.

Q. Do you have any evidence that the Runnells "ASP" Well Number 3 is the same pressure as the Townsend State Number 5?

A. I don't believe that the Townsend 5 and the Runnells 3 are in pressure communication.

Q. So the wells that are about, oh, 900 feet apart are not in communication, but the Townsend State Number 5

and the Shell Lusk "ANB" Number 2, which are about a mile away, are in communication?

A. My testimony is that I have pressure data to show that both of those statements are true.

Q. Could you provide us with that pressure data?

A. Yes. I don't have copies of it to hand out, but you're welcome to have copies of it. And if it -- just for logistic reasons, I don't have it.

Q. Now, what recovery factor did you use in your reserve calculation?

A. As I testified, I said about 50 percent.

Q. One-five percent?

A. No, five-zero. If you'll look at the PVT data you'll find it's a volatile oil reservoir, and it's not uncommon to see unusually high recovery factors when you included the gas from a volatile oil reservoir.

Q. So what you're saying is, if the recovery factor was 25 percent, the -- Well, what about reserves in the Runnells "ASP" Number 3? What have you estimated?

A. The current estimate we would have would be close to 400,000 barrels recoverable reserves from that well, and better than 2 BCF of gas.

Q. Okay. And Ocean Energy is about -- Townsend Number 5 is about a fourth of that?

A. No, Townsend Number 5 has already produced

280,000 barrels, and I believe the Townsend Number 5 probably will produce something in the ballpark of 320,000 to 350,000 barrels.

Your engineer's testimony was that he had produced 278,000 barrels of oil from Townsend Number 5.

Q. But you're saying if it wasn't -- if it was just that porosity pod, it would only produce about 120,000 barrels?

A. Yes, if you will do the volumetrics, which your engineer testified that he had not done, what you will find, based on the porosity log, which we have a copy of, PVT data which I have, and you all -- as was made available to you at one point in time, that you will come up with recoverable reserves of about 120,000 to 140,000 barrels of liquid from a pod that size.

Our geologic picture is not very different from your geologic picture with respect to that area up there. However, we believe that pod continue down into Section 11 to some considerable extent, and we have pressure data to support that.

Q. Has Yates considered drilling a well in the northeast of the northwest of Section 11?

A. Let me make sure -- could you give me -- northeast --

Q. Directly between the Lusk "ANB" Number 2 and the

Townsend State Number 5?

A. Yes, sir. You're aware of the location of the Schenck Number 1?

Q. No.

A. That well is located roughly in the northwest of the northwest.

Q. What is the status of that well?

A. It's producing.

Q. What was the initial pressure of that well?

A. I don't have it off the top of my head, I'm sorry. And I don't have it with me, unfortunately. It was drawn down considerably, producing at a high GOR. It's also producing water similar to the way the Townsend Number 5 is.

Q. That well is in the northwest quarter of the northwest quarter?

A. That's correct, I believe that's correct.

MR. BRUCE: That's all I have, Mr. Examiner.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Pearson, are you saying that the Schenck Number 1 is also in that pod?

A. I believe that the Schenck Number 1 is in that pod.

Q. Together with the Lusk Number 2?

A. And the Townsend Number 5.

Q. Okay, you are going to submit the pressure data that you've testified to?

A. I can submit the pressure data for the Shell Lusk Number 2 and -- actually two pressure measurements in the Shell Lusk Number 2, the original DST and a subsequent measurement. I do not have the Schenck pressure data with me, I don't think. I can look and make sure, but I don't think that I have any Schenck pressure data with me. I can submit that, if we have it back in Artesia, at a later date.

The well has only recently been drilled and completed, and I don't -- I'm not absolutely certain of the status on what pressure measurements we've made.

EXAMINER CATANACH: Okay, I would appreciate if you would submit that when it's available.

I would also like to see your volumetric calculations on the Townsend Number 5 well --

THE WITNESS: Okay.

EXAMINER CATANACH: -- if I could.

THE WITNESS: I don't have those with me, but I have them in Artesia.

EXAMINER CATANACH: If you could submit those as well.

Anything else of this witness?

MR. BRUCE: I would also like to be copied with any data that's provided to the Division, Mr. Examiner.

MR. CARR: We will, everything.

Jim, questions?

FURTHER EXAMINATION

BY MR. BRUCE:

Q. Do you also have volumetrics on the Runnells "ASP" Number 3?

A. I should, yeah. I don't have them.

MR. BRUCE: If we could request those also.

THE WITNESS: I'm not sure that we would be willing to provide the map for the Runnells Number 3 that would go into those volumetric calculations.

EXAMINER CATANACH: Did you hear that, Mr. Bruce?

MR. BRUCE: No, I didn't, I didn't.

EXAMINER CATANACH: Could you go ahead and repeat that?

THE WITNESS: I'm not -- I don't believe that we at this stage of the game -- I'm not confident we would be willing to provide the map that go into the volumetric calculations for the Runnells Number 3. I'm going to reserve the right to --

MR. BRUCE: It seems pertinent to this case, Mr. Examiner.

MR. CARR: Well, if you would like to pursue it

with a subpoena, then we'll argue it in that context.

Q. (By Mr. Bruce) One follow-up question, Mr. Pearson. Is it possible that there are thicker portions of the Townsend State Number 5 porosity pod that you haven't taken into account in your calculations?

A. I think there are. I think that uncertainty is present in any calculation, yes.

However, the porosity in the well is 90 feet thick and is -- at 90 feet, it's probably above the tuning frequency for the geophysicist to be able to detect that. And if, indeed, it gets significantly thicker, you should be able to see that in your geophysical data. And our interpretation of the geophysical data would not support that it gets significantly thicker.

Q. But you haven't presented that data here today, have you?

A. No. And I might also add that the Townsend 5 pay is the thickest of any of it observed.

All I have to say is that I have done the volumetric calculations and have a conclusion from them, whereas you all have not done the volumetric calculations.

MR. BRUCE: I have nothing further, Mr. Examiner.

MR. CARR: Nothing further.

EXAMINER CATANACH: This witness may be excused.

What's a reasonable time that we can expect

these, Mr. Pearson?

THE WITNESS: I should be able to get them -- With the exception of the question about the map on Runnells 3, I think I could probably get them to you by the end of next week, if that's okay with you.

I should have them all where I can just copy them and send them to you.

EXAMINER CATANACH: Can you supply just the volumetric calculations without the map?

THE WITNESS: I think I could, yeah.

EXAMINER CATANACH: That won't be a problem?

THE WITNESS: Yeah, as long as I can just give you an area, without showing you where the -- where I think --

EXAMINER CATANACH: Let's go with that, and if we have to go pursue that further, we can.

MR. CARR: And we will submit that. We will try and have it here before the end of the next week, but by the end of the next week in any event. We'll do it as quickly as we can.

EXAMINER CATANACH: Okay. Let me suggest also, I want rough draft orders in this case --

MR. CARR: Yes.

EXAMINER CATANACH: -- within three weeks.

MR. BRUCE: Mr. Examiner, could we also provide

our volumetric calculations?

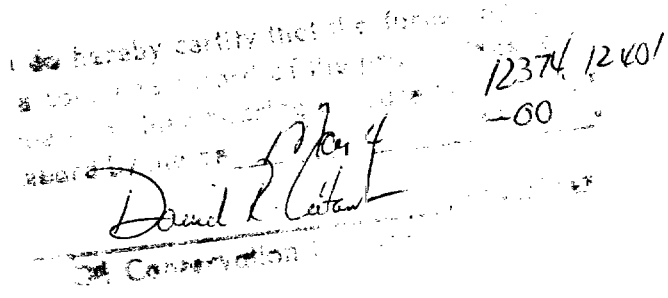
EXAMINER CATANACH: Yes, sir.

Anything further? I think that's enough.

There being nothing further in these cases, Case number 12,374 and 12,401 will be taken under advisement.

(Thereupon, these proceedings were concluded at 3:10 p.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 May 16th, 2000.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002