STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 9854

EXAMINER HEARING

IN THE MATTER OF:

Application of Stevens Operating Corporation for Pool Creation and Special Pool Rules, Chaves County, New Mexico.

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R. CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

February 7, 1990

ORIGINAL

A P P E A R A N C E S

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I N D E X

E X H I B I T S

EXAMINER CATANACH: Call the hearing back to order and call Case 9854.

MR. STOVALL: Application of Stevens Operating Corporation for pool creation and special pool rules, Chaves County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm Campbell & Black, P.A., of Santa Fe. We represent Stevens Operating Corporation.

MR. CARROLL: My name is Ernest Carroll, of Losee, Carson, Haas & Carroll of Artesia, New Mexico, and we represent Yates Petroleum Corporation.

MR. BRUCE: Mr. Examiner, my name is Jim Bruce from the Hinkle Law Firm in Albuquerque, representing Marsh Operating Company.

EXAMINER CATANACH: How many witnesses do you have, Mr. Carr?

MR. CARR: I have two, maybe three.

MR. CARROLL: I have two witnesses.

EXAMINER CATANACH: Any witnesses, Mr. Bruce?

MR. BRUCE: None.

EXAMINER CATANACH: Can I get all the

witnesses to stand up and be sworn in.

(Thereupon, all witnesses were sworn.)

EXAMINER CATANACH: Mr. Carr?

MR. CARR: At this time we would call Mr. Ahlen.

JACK AHLEN

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

EXAMINATION

BY MR. CARR:

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

A. Jack Ahlen.

Q. Mr. Ahlen, where do you reside?

A. Roswell, New Mexico.

Q. By whom are you employed?

A. Stevens Operating Corporation.

Q. Have you previously testified before the Oil Conservation Division and had your credentials accepted and made a matter of record?

A. Yes, I have.

Q. How were you qualified at that time? as a petroleum geologist?

A. Yes, sir.

Q. Are you familiar with the application filed

in this case on behalf of Stevens Operating Corporation?

A. Yes, I am.

Q. Are you familiar with the area that is the subject of the application?

A. Yes, I am.

Q. Have you made a study of the area?

A. Yes, I have.

MR. CARR: Are the witness's qualifications acceptable?

EXAMINER CATANACH: They are.

Q. Mr. Ahlen, would you briefly state what Stevens seeks in this case.

A. In this case, Stevens seeks a 320-acre spacing. We also seek a temporary testing allowable of 650 barrels of oil per day, which is the depth spacing allowable, a gas/oil ratio of 20,000 to 1, and a nine-month testing period.

Q. Are you also seeking the creation of a pool in the Fusselman formation?

A. Yes, sir.

Q. Have you prepared certain exhibits for presentation in this case?

A. Yes, I have.

Q. Would you refer to what has been marked as

Stevens Exhibit 1, identify this exhibit and review it for the Examiner?

A. Stevens Exhibit No. 1 is a land plat which is a copy of the Midland Map Company land map in this particular area covering a portion of Township 10 South, Range 27 East. It shows lease ownership and the location of wells. The wells that are not with large circles around them are essentially San Andres oil producing wells and dry holes.

There are four deep wells on this illustration. They have the large circles drawn around them, being the well in the southeast quarter of the southeast quarter of Section 16; there are two wells in the west half of Section 21; and one well in the northwest quarter of Section 28. These are deep penetrations. They all have penetrated to the Pre-Cambrian basement in this area. There are no other wells on this illustration that are deep wells.

Q. What is the status of the northernmost well? Has that one been completed?

A. That well, the northernmost well has been completed as a dry hole in 1950. It is currently producing out of the San Andres after plugging back to it a long time ago.

Q. What are the proposed pool boundaries for

the new pool?

A. We would propose the south half of Section 21 and the north half of Section 28.

Q. On this map you have a trace for the cross-section which is your next exhibit?

A. That is correct. The heavy line that connects those four wells is Exhibit No. 2.

Q. Mr. Ahlen, would you review the history of the development of this area? And in so doing, if you need to, would you refer to your cross-section which is Exhibit 2.

A. Okay. In 1950, approximately, Honolulu drilled a #1 Levic test in the southeast of the southeast of Section 16. They had a few shows of oil and gas in the lower Paleozoics. After testing, the well was subsequently plugged and abandoned, then it was reentered and made a San Andres producer.

In the early 1980s, San Andres development started in this vicinity. Then approximately 86 and 87 there was a rapid expansion of San Andres development. During that development, a shallow, structural anomaly was developed and seismic work was done in the area, with the result that Yates drilled their # 3 "AFT" well, which was a discovery well in the Siluro-Ordovician section. It was a gas well.

Subsequent to that, Stevens drilled a well in the northeast border of Section 28. That was in late November and December of 89. The Yates discovery was in 88, November and December. Most recently Yates has drilled their #6 "AFT" well in the northwest quarter of Section 21. The latter three wells are all capable of production in the Siluro-Ordovician section.

Q. Would you now like to work with your cross-section and review each of the wells on that for the Examiner? Are you ready to go to that?

A. Yes, I am. May I go to the wall?

Q. Yes.

A. On this cross-section, I show the four deep wells that are circled on the index map, with the Honolulu well on the extreme right, the deep dry hole drilled in 1950. The next well in line is the #6 "AFT" drilled by Yates. The next well in line is the #3 "AFT" drilled by Yates. The well on the left is the Stevens well.

All of them, I have arranged the wells on a sea level, subsea datum. They are datumized at a minus--I wrote it down, minus datum of 2700 feet. I have a correlation marker in the Pennsylvanian Section immediately above the unconformity, and it is carried

across the cross-section and projected into the Honolulu well at this point.

Q. That's the dark, black line running across the exhibit on the top?

A. And marked Penn marker. There is an erosional conformity at the base of the Pennsylvanian and the top of the Siluro-Ordovician section over the crest of the structure, and the unconformity is present on top of the Mississippian in the Honolulu-Levic well. The only well that has Woodford section present is the Honolulu-Levic well, and I've marked that as the top of the Fusselman in that well. That correlates with the eroded Fusselman top here, but there is a significant amount of section missing at the top of the Fusselman. The Mississippian is also completely missing.

There is a Montoya marker that I have correlated across the section based on a radioactive marker that is present at a depth of approximately 6435 feet in the Stevens well. That correlates with this radioactive marker and this radioactive marker in the #6 "AFT", and this marker in the Honolulu-Levic, and the Pre-Cambrian follows that very closely.

On the basis of sample shows, the electric log, water saturation, bulk volume water calculations,

I have established, as well as log characteristics, I have established a gas/oil contact at a datum of approximately minus 2524. There is an oil column of approximately 50 to 60 feet, from that datum, to a datum of minus 2587. There is a transition zone, an oil to water transition zone from that datum to approximately minus 2650. Below this zone essentially water only is indicated by log calculations. No testing has taken place below this except in the Honolulu-Levic well where only water was recovered on drill stem tests.

Now, Yates has recently completed evaluating a zone in the transition zone. Initially that well produced oil, and it shortly went to oil and water, approximately 50/50. They are currently testing a zone approximately 20 feet up from that, and I think perhaps other witnesses can testify that it will, better than I do, they have more recent information, but at last word it was producing oil only.

Yates has also perforated in the oil zone only in this particular well, and it produces oil. Yates initially completed their discovery well in the interval from 6255 to 6356, and it was completed as a gas well with no oil indicated. It flowed based on a

five-hour test, 3,800 Mcf per day at that rate.

Stevens drilled the McBride. No drill stem tests were taken on the way down. However, production tests have been conducted through perforations from a depth of 6218 through 6364. We will have a later witness that will attest to the specific tests during that time, but essentially an oil/water--excuse me, an oil/gas contact was quite firmly established, some water and oil and gas. All of these were produced from the lower perforations only.

From analysis of the samples and the resistivity log on this well, there is a strong suggestion that the reservoir has both fracture porosity as well as vuggy porosity as well as intergranular porosity. The testing also indicates a highly fractured reservoir, so that it is an inhomogenous reservoir.

I would like to explain the mud log on the extreme left here. Essentially we have some shows of oil and gas in the gas zone. The oil and gas zone does have some oil staining and some good cuts, and the gas analysis does show methane, ethane and butane. There is a distinct change in the character at the gas/oil contact in that the gas anomaly diminishes both on the C-1 and the C-2. However, the

C-3 increases through the oil zone. Also, the sample shows increase in the oil zone. It appears as though most of the rock fragments are oil stained in the oil zone.

In the transition zone we get some porosity that is oil stained and some porosity that is not oil stained. It is interesting to note that there very definitely is oil staining up in the oil column which suggests that the reservoir may have been oil saturated at one time but currently is not, to the degree that it could be wet oil saturated porosity. However, it has been subsequently drained since we believe that the oil source and the gas source are different. The gas probably came from Pennsylvanian sediments and the oil came from Mississippian and preMississippian sediments. They both migrated into the structure at slightly different times.

Q. What conclusions can you draw now from this particular exhibit and the data shown thereon?

A. I feel that the gas/oil contact is relatively uniform through the three wells. The oil/water contact appears to be a transition zone in the three wells, and one may produce some oil and some water from different zones of porosity within that interval. It is also a possibility that we may have

some oil saturation already in the oil zone, since in the original drill stem tests by Yates they did actually recover 2.1 barrels of oil while flowing 1.8 million cubic feet of gas out of that zone.

Q. Does that conclude your testimony from Exhibit No. 2?

A. Yes, sir, unless you have any questions.

Q. Would you like to return to your seat?

A. Thank you.

Q. Mr. Ahlen, would you refer to what has been marked as Ahlen Exhibit No. 3, identify this for Mr. Catanach and review the information contained on this exhibit.

A. Exhibit No. 3 is a structure contour map on the top of the Fusselman formation. There are four subsurface control points and they are the four previously mentioned wells. It is also controlled by two seismic lines, essentially one east/west and one north/south, quite near the eastern line of Section 21 and 28.

It does appear as though all points along that north/south seismic line are on the downthrow side of a major fault. The east/west line crosses two major faults. On the seismic line, on the eastern fault, is near shot point 435--excuse me, 360. On the

western fault, the fault is approximately near shot point 345.

I have contoured the datums of that seismic and the subsurface data on the same map. I think that's justified by the data that is available. I show the Yates discovery well to be 20 feet high to the Stevens well; the second Yates well, the #6 "AFT" is approximately 120 feet low to their discovery well. It's quite possible that that is a fault that caused that significant difference in datum. However, I have contoured it in the most simple manner possible, and it is probably correct. That, in turn, is 400 feet high to the Honolulu well, which is in the southeast of the southeast of Section 16, justifying the major down to the east fault.

Q. Would you now go to Ahlen Exhibit No. 4 and review that, please.

A. This is a structure contour map on the top of the Montoya formation. The gamma ray marker that I have pointed out on the cross-section is utilizing the same four subsurface wells that reach the subsurface data, and following the form lines of the previous Fusselman map. You'll note in this instance there's a significant difference between the Yates #3 "AFT" and the Stevens well, in that the Stevens well is now

structurally high to the Yates well, suggesting that there had been differential erosion at the unconformity. What that means overall is that the Stevens well has a thinner Fusselman/Montoya Section.

Then the difference between the #3 "AFT" and the #6 "AFT" is approximately 260 feet. This means that the Fusselman reservoir section has thickened significantly from the #3 "AFT" to the #6 "AFT". Again, there's a big difference in datum between the Honolulu well and the #6 "AFT". In this particular instance, 370 feet, again primarily due to to the fault.

Q. Based on your study of this area, what conclusions have you reached?

A. I have reached the conclusion that this is an oil field with a gas cap; it is bounded on the east and west by a major structural deformation of faults down to the west and a fault down to the east. This is a horsed primary reservoir perhaps that's been enhanced by secondary leaching fluids. The intimation is that there is significant fracturing within the reservoir itself and that permeability horizontally and vertically are probably about equal.

Q. How would you characterize the data that is available to you to make these judgments on the

reservoir?

A. I had four wells to make these judgments. What we need are additional wells to further develop the aerial extent of the pool and characterize the sedimentation and the structural mode.

Q. When you look at the Stevens well in this reservoir, does it appear to be a typical well or what you would expect from a geological point of view?

A. Oh, yes.

Q. From a geologic point of view, why would 320-acre spacing be desirable?

A. In the first place, when we initiated these proceedings and asked for a hearing, Yates had a gas well. We suspected that we had an oil well because of the nature of the fluids at the surface, the color of the flare, and we put a separater on and, sure enough, we had copious quantities of oil present in our gas flow. So as we continued to develop evidence, we have come to the conclusion that it is an oil field with a very thick and large gas cap. However, we did not really want to penalize Yates Petroleum Corporation for having a gas well while we had an oil well and, therefore, we designated a 320-acre spacing since 320 acres is the state-wide spacing unit for a Pre-Permian well.

Q. So the impact on the Yates well was considered in developing these parameters?

A. Absolutely.

Q. Does that also apply to seeking a 20,000 to 1 gas/oil ratio?

A. Yes, sir. If Yates had a gas well and we declared this an oil pool, they would have difficulty making a commercial well out of that particular well, and we did not want them to be penalized.

Q. What testing period or initial period for the temporary rules is Stevens actually seeking?

A. A nine-month testing period.

Q. Will that permit sufficient development of data to make judgment calls on further development of the reservoir?

A. We hope that it will, yes, sir.

Q. In your opinion, will granting this application prevent waste?

A. Yes.

Q. How so?

A. First of all, if we only go on classic reservoir interpretation, we only think that we know the correct parameters to use in the proper development of this pool. If we are allowed enough time to actually test some of the theoretical

implications, well, then, we may actually be damaging the field rather than helping it, and we would promote waste rather than preventing waste. So we need that time in order to develop effective parameters that will ensure that the pool is developed properly.

Q. You're talking about damage to the pool being additional development without the data that could be obtained during this test period, is that correct?

A. Well, the damage could be economic in the sense that you drilled too many wells, or there could be economic damage in causing the oil to flow into a dry gas cap. We do not know for sure. We suspect that it is, but there is some evidence that suggests also that it is an oil saturated reservoir.

The samples, as I pointed out on the cross-section, have good oil staining, good cut, as well as the drill stem test on the Yates #3 did actually recover what was called 28-gravity oil. There are some unanswered questions that we need additional data. The next well that is drilled, we need to take that into consideration, consider coring, if it's possible to core here, as well as gather other data, flow data, that will be devaluated during the nine-month period that we're proposing.

Q. Now, you've talked about waste. What would be the impact on correlative rights of a denial of the Stevens application?

A. Well, Stevens would not be able to produce its rightful share of the hydrocarbons present in their proration unit.

Q. Mr. Ahlen, were Exhibits 1 through 4 prepared by you?

A. Yes, sir, they were.

MR. CARR: At this time, Mr. Catanach, we would move the admission of Ahlen Exhibits 1 through 4.

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

MR. CARR: That concludes my direct examination of this witness.

EXAMINER CATANACH: Mr. Carroll.

EXAMINATION

BY MR. CARROLL:

Q. Mr. Ahlen, at the present time, does Stevens Operating have a method by which to market the gas that will be produced in this well?

A. Yes, sir. There is a 10-inch pipeline in the vicinity that crosses very near or goes through the location, Transwestern. The gas does have

hydrogen sulfide in it that makes it unmarketable, but at the present time Stevens is in the process of purchasing a unit which will remove that sulfur from the gas stream so that it may be sold. And the other facilities are already present on the location.

Q. Are the pipeline connections already present on the location?

A. No, sir. They're in the process of being hooked up.

Q. And the unit to sweeten the gas, is it on site at the present time?

A. It is not.

Q. What's the time frame that Stevens Operating is looking to connect the well to the pipeline and provide the sweetening facilities?

A. Within a week.

Q. One week?

A. Yes, sir.

Q. That would cover both items?

A. Yes, sir.

Q. There has been some testing going on with respect to this particular well, has there not?

A. Yes, sir.

Q. With respect to those tests, what kind of production are you looking at from this McBride well?

A. We have had rates of oil production up to 350 barrels of oil per day.

Q. How much gas was being produced at 350 barrels per day?

A. About 3.5 million cubic feet per day. There will be later testimony by our engineering witness that will specifically detail what you are asking.

Q. All right. Now, Mr. Ahlen, you made the statement that Stevens Operating feels that it needs nine months to perform additional testing and answer unanswered questions?

A. Yes, sir.

Q. Would you please specify what unanswered questions you intend to seek answers to and what methods of testing you intend to employ to answer those questions?

A. Okay. First of all, most of those questions are engineering questions, and they're more properly addressed by an engineer. However, one of the questions that we are concerned about is the encroachment of water and whether this is a 100 percent efficient water drive pool or not. Those questions will be more properly addressed by the engineering witness.

Q. All right. Well, with respect to production, producing this well for nine months, is there any evidence you think you would gain for you to be able to better define the boundaries of this pool?

A. With the production tests only?

Q. Yes.

A. That might be enough time. However, in the meantime, we are also running additional seismic lines that will help us to define the pool. This requires time. We are also in the process of coordinating with Yates Oil Corporation in trading data so that we all may have a better opportunity to interpret the limits of the reservoir.

Q. You are aware that Yates Petroleum Corporation does have more than the east/west line and the north/south line you talked about?

A. Yes, sir, I am. This is part of the seismic data that we have requested from them.

Q. Now, I believe you made the statement that the only control or the control you have out there right now with respect to this pool exists with the four wells and the two lines of seismic? That's what you're armed with today?

A. That's what has been available up to this point. We have shot a line already, an east/west

line, and it's at the processor right now being converted to data that's readily available. It runs east/west approximately 1980 feet from the south line of Section 28. It's part of the additional information that is needed to develop the configuration of the pool.

Q. That seismic line is to the south of the seismic line you've already discussed with us already, is it not?

A. That's correct. Brand-new line.

Q. Now, your Exhibits 3 and 4, one of the purposes of them is to help in defining the extent of this pool that we're talking about, is it not?

A. Yes, sir.

Q. The data that you have, at least that you've been able to obtain through the two northernmost wells, the dry hole, the Honolulu well and the #6 Pathfinder "AFT" well that Yates just drilled, they pretty well define the northern boundary of this pool, do they not?

A. If you'll look at the map, not necessarily. But the eastern limit of the pool is defined by the north/south fault. I do not really know what the structural configuration is north of the #6 "AFT". There's a strong suggestion that it is low

but this is, again, part of the additional data that we're trying to develop.

Q. With respect to the area south of the McBride well, you really have no real good control at all?

A. That is correct.

Q. So basically, if you set a limit on the pool to the south, it's pretty much guesswork, then, isn't it?

A. That's correct.

Q. Mr. Ahlen, I take it, then, that you have done no studies with respect to possible reserves that might be in this pool, the depletion of those reserves, whether oil or gas, then? That's been done by the engineer that's going to testify, is that correct?

A. That is correct.

Q. But your maps, I would take it, were furnished to this engineer to help him in determining reserves, is that your understanding?

A. Yes, sir.

Q. Basically what we're looking at is a pool that's located probably right in the middle of what's commonly called a horse block? It's been pushed up and you've got faults on each side, is that correct?

A. Yes, that is correct.

Q. And at least to the seismic line that you have seen, you can pretty well determine that at least the east and the west boundaries of this pool are pretty certain because your east/west seismic line very definitely define those fault lines, did they not?

A. This Commission is very familiar with seismic techniques and their accuracy, which is sometimes limited.

Q. I understand.

A. Within the capability to interpret the data, yes.

Q. At least your Exhibits 3 and 4 have pretty well defined the limits of the pool based on that seismic, then?

A. Yes, sir.

Q. And it's within those fault lines? You have contained it within them?

A. Yes.

Q. Can you tell me why it is necessary to have a 650-barrel allowable?

A. We do not want to limit the Yates productivity in their gas farm.

Q. And that is basically your sole reason for

picking 650 barrels as a limit? You just don't want to unfairly treat Yates?

A. There is another factor, in that if we do not produce our gas at an adequate rate, we will recover no oil. This will be discussed by the engineering witness as well.

Q. So at least your understanding is that you won't have an oil well out there unless you produce significant amounts of gas?

A. That is correct.

Q. And again, the 20,000 to 1 GOR that you're requesting, again I believe you testified that the reason that you picked such a high GOR was because you did not want to penalize Yates?

A. That is correct. The testing that we did, we were running GORs anywhere from 9,000 to 1 up to 15,000 to 1. It also came with slightly above what our tests indicated.

Q. Did you compute the gas/oil ratio if you were producing 350 barrels at 3.5 million, what that gas/ratio is?

A. It was about 9,000 to 1.

Q. 9,000 to 1?

A. Yes, sir.

Q. So basically, from the--

A. At a lower rate it was a higher GOR, which is rather anomalous for this type of a reservoir.

Q. So basically, at least at this time, in your testings you have not at least proven a need for a GOR of 20,000 to 1 out of your well?

A. No. Our highest GOR at the lowest rate that would produce oil was about 15- to 16,000 to 1. There will be an exact number with the next witness.

Q. Now, is there any doubt in your mind, Mr. Ahlen, that the Pathfinder #6 well, the #3 well, which are both Yates wheels, and the McBride well which is a Stevens Operating well, is there any doubt in your mind that those three wells are sitting in the same pool or in communication with each other?

A. No doubt in my mind. I think they're quite well connected by fracturing within the pool itself, as well as being the same stratigraphic horizon.

Q. Now, Mr. Ahlen, you're basically familiar with the proposition that some oil wells do have, as a drive mechanism, a gas cap, is that correct?

A. Yes, sir.

Q. If one depletes the gas cap too rapidly, hasn't it been proven by the industry that that could also result in a loss in recoverable oil?

A. Oh, yes. That's why we're asking for a

temporary testing allowable only. We have absolutely no intention of making this a permanent ruling. We need to find out additional information before permanent rules are established for the pool.

Q. At least you do recognize and Stevens Operating recognizes that if we did make a mistake out here we could hurt ourselves, both Yates Petroleum Corporation and Stevens, if you unduly depleted that gas cap?

A. Absolutely. Stevens wants the greatest return on their investment. It's obvious that the oil is much more valuable than the gas in this pool.

MR. CARROLL: May I have just a second, Mr. Examiner? (Pause) Just a couple more questions, Mr. Catanach.

Q. Mr. Ahlen, you made the pronouncement that, in your opinion, an adoption that what Stevens Oil is proposing here would prevent waste, is that correct?

A. Yes, sir.

Q. If what Stevens Oil is proposing would cause an unnecessary depletion of the gas cap, i.e., there might be other ways of testing, wouldn't you consider that unnecessary depletion of the gas cap waste also?

A. Not really, so long as we stay within two

or three percent of the total reservoir volume. I don't think that would constitute irreparable waste.

Q. If we're trying to determine what's wasteful and not, we need to pretty well have a handle on what the reservoir volume is?

A. Yes, sir.

Q. Because if we miss our guess on how big the reservoir is, then we could be missing our guess on predicting how much damage we may be doing to that gas cap, i.e., reducing it by one or two percent as opposed to 10 or 12 percent?

A. There's no chance, I don't think, that we would be producing 10 to 12 percent of the gas in place by the testing that we're proposing.

Q. Have you done or performed any studies with numbers to tell you that?

A. I have heard some but what I tell you would be only hearsay, and I prefer not to do that.

Q. So you're basing that statement, then, upon other person's work or--

A. Qualified persons, yes, sir.

Q. All right. Now, you've also stated that with respect to the harm that Stevens Oil would be experiencing if they didn't allow this to happen, I believe you basically made it or summed it up in the

statement that Stevens would not be able to produce their rightful share of the oil and gas in place, and that's what you're worried about.

Well, if the Commission were to adopt, let's say, more restrictive guidelines for the testing of this area, i.e., a shorter time period, lesser amounts of oil to be produced, and a lower GOR, if that was applicable to all parties in this pool, then Stevens Oil would not be unduly or unfairly harmed, would they?

A. It depends if the allowable is lowered to such an extent that we can't produce any oil at all to evaluate the reservoir. We need an adequate amount of gas production to get the oil to the surface. We cannot do that on a GOR of 2,000 to 1. That's already been demonstrated to us by our well testing. I should say, a state-wide rule.

Q. The state-wide rules dictate a 2,000 to 1?

A. Yes, sir.

Q. Are you aware of any other oil wells in this area that have a proration set at 320 acres?

A. I am not aware of any anywhere.

Q. This would be a first time, would it not, at least in Southeastern New Mexico?

A. Yes. Remember, we primarily set up the 320

to accommodate a 320-acre gas unit immediately offsetting us to the north.

Q. All of these wells were drilled on 320s contemplating that they would be gas wells, is that correct?

A. That is correct.

Q. Why would you leave the #6 well out of this pool?

A. Because it's an oil well.

Q. But it is in communication with the other two wells, though?

A. Yes.

Q. The McBride well is also an oil well?

A. We think so.

Q. What basis, then, would you have for leaving it out, if we got your pool as an oil pool and that's an oil well and it's adjacent to it?

A. We would be willing to include it, if Yates would so elect.

MR. CARROLL: I pass the witness.

MR. STOVALL: Any redirect?

MR. CARR: A little bit.

MR. BRUCE: I have just one question.

EXAMINER CATANACH: Go ahead, Mr. Bruce.

EXAMINATION

BY MR. BRUCE:

Q. Mr. Ahlen, what is the basis for requesting only lay-down units in this pool?

A. The basis is that's the previously existing configuration of the proration units.

Q. In other words, the first two wells were lay-down units, in effect?

A. Yes, sir.

MR. BRUCE: Thank you.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Ahlen, in response to questions by Mr. Carroll, you stated that depleting a gas cap could harm a reservoir, isn't that correct?

A. Yes.

Q. Is that your conclusion in regard to this particular reservoir, that that is going to occur?

A. With the limited temporary allowable that we're requesting, I do not feel as though we will overly damage the reservoir in this instance. We need additional information to develop what the real story is in the pool.

Q. Before you can reach that conclusion, what do you have to know about the water drive?

A. You have to know whether it is active or not, first, then you need to know the degree of activity, whether it's a 50-percent water drive, 75-percent water drive or 10-percent water drive.

Q. With the data available now, do you know that?

A. Absolutely not.

Q. Would it be helpful to know whether you have oil saturated rock in the gas zone?

A. Yes, it would.

Q. Do you know that now?

A. We do not.

Q. Now, we talked about wells in this area and whether or not you're aware of any other oil well that has this sort of spacing. Are you aware of any other oil well in the area that is displaying the producing characteristics of the Stevens well in Section 28?

A. Yes. Up in the Foor Ranch, Fred Pool has a gas well that actually produces oil along with the gas. He has a second well in the same section, Section 13, that produces condensate. So there very definitely are other wells in this area that are oil pools with a gas cap. Now, in Foor Ranch, the oil ring is extremely thin and probably is not effective.

Q. Would it be comparable to the situation you

see in this reservoir?

A. Yes, sir.

Q. When the application was made for these particular rules, are you aware of what the status of the #6 well was at that time?

A. It hadn't even started drilling yet.

Q. Is that one of the reasons it was not included in the pool?

A. That's correct.

MR. CARR: That's all I have.

MR. STOVALL: I have a rather unusual situation or request here at this point in the hearing. In listening to Mr. Carroll's cross-examination, both the Examiner and myself are not quite certain where Yates is coming from and what their position is.

I think, before you speak, Mr. Carroll, I think what we would like to ask at this point, and then we'll give Mr. Bruce also, if you care to do so on behalf of Marsh, that would be fine, but if you would just make a very brief statement of the concerns so that when we listen to the cross-examination and your witnesses, we can have some idea what your position is. Then, Mr. Carr, if you have any concerns that you would like to respond to in clarifying your

position, fine. I think we understand Stevens' position, but not Yates' at this point.

MR. CARROLL: Fine. The discovery well out here is the #3 well, and it was drilled a little over a year ago. We thought we had a gas well. There was no line to produce that well in that area at the time it was drilled.

Yates entered into negotiations, Transwestern agreed to build, and it's only just been recently built out to this area. So the well has never been produced or really tested, other than just the initial testing and what have you.

Then the McBride well was drilled and then we began drilling the #6 well, and the results that we became aware of from the McBride well and the #6 well, changed our thinking that we may not have a gas well, we may have an oil pool out here with a gas cap.

We're very concerned about it because we couldn't deplete the gas cap. We feel that this reservoir is a limited reservoir as defined by our seismic, which we will testify to, and that the temporary rules that are being requested by Stevens Oil could, realistically, deplete as much as 10 to 15 percent of that gas cap in the nine months, or even shorter period. This is why we are here, because that

could, in effect, cut in half the amount of recoverable oil. And we'll testify about the reserves which we predict.

What we are going to propose, then, in opposition or for consideration of the Commission, is that we are, right now, involved in some very extensive testing on both the #3 and the #6 well. We would propose temporary rules for 90 days. We would ask that we limit the barrels to 222 barrels, and the GOR to the state-wide rules, it's 2,000 to 1.

We feel that that would allow the kind of testing that is necessary out there to determine what kind of reservoir we have without taking the risk of depleting the gas cap. And our testimony will be directed at that, I think, and that's what we're going to propose to the Commission as a solution.

MR. STOVALL: Mr. Bruce, did you have anything you wanted to add?

MR. BRUCE: No. We don't oppose Stevens' application. We're just here for information. We're an offsetting interest owner--working interest owner.

MR. STOVALL: Mr. Carr, did you need to clarify in any way? Mr. Ahlen, we're not examining you at this point. We just want to know where we're coming from.

MR. CARR: Basically, our position is that we have a reservoir that is performing in a way that was not initially anticipated, that what is needed now is the acquisition of additional information. And what we have proposed, we thought, would enable us to obtain that information and, at the same time, not pose problems for the offsetting Yates wells.

I can tell you now that the recommendation that Mr. Carroll has just proposed has to be unsatisfactory to us because with the limits they've imposed, not the 90 days as much as the gas/oil ratio, it's simply going to be impossible to produce any oil. The question becomes, when you have substantial volumes of oil under your tract, you have wells that aren't performing like you would expect, what you have to do is to be able to acquire information so you can make some informed judgments and not be restricted to producing some gas from a well that is in an oil pool while other wells in the pool produce the oil that's under your tract. That's where we are. It's complicated and it's not what anybody, I think, expected when the wells were initially drilled.

MR. STOVALL: Usually we can figure out, coming in, what the opponents are saying. This time it was really unclear.

(Discussion off the record.)

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Ahlen, you're pretty confident that what you're dealing with is an oil reservoir?

A. Yes, sir.

Q. With a gas cap?

A. Yes, sir.

Q. On what basis, besides leasehold interest or anything else, are you proposing the 320-acre spacing?

A. It is primarily an indication that we didn't want to penalize Yates Petroleum Corporation because they had a gas well. It was completed as a gas well and we knew nothing different until just a few days ago. What they have, they have now recompleted their gas well to a well that will produce oil.

Q. I see. So you don't have any technical support to justify your position that these wells will drain 320 acres?

A. No, sir.

Q. How deep are these wells, Mr. Ahlen? Let me rephrase that. In terms of a depth bracket allowable, what would they receive?

A. 6,000 to 7,000 feet. The deepest well is the dry hole to the north, and it's 7,216 feet deep. The other wells are 500 feet shallower than that.

Q. How did you arrive at your 650 barrels a day allowable?

A. Just took 160-acre depth bracket figure and doubled it. No? Excuse me. There's a better witness to that.

Q. I was going to tell you that was incorrect. As I understand it, you have not done any calculations to determine the volume of gas?

A. That is correct. I have not.

Q. Is the Stevens well currently just completed below the gas/oil contact?

A. It has perforations in the gas column and the oil column. They are all open. It has been tested--all of those perforations have been tested simultaneously. We have also tested it with a packer at what we consider to be the gas/oil contact. We have produced with an annulus only, in the gas zone only, we've also produced through the tubing in the oil zone only.

We have done extensive testing attempting to evaluate all these things, but we hesitate to test too much because it's a waste of natural resource.

When we vent that gas, it's lost forever and we lose money, just as Yates does. That's why we don't want to do extremely extensive testing and waste money. We would much rather do it into the pipeline.

Q. You mentioned one test that you had conducted that you recovered 350 barrels a day at 3.5 million cubic feet a day. Is that from both zones, from all the zones open?

A. No. That was from one of the zones only. There will be testimony to those exact tests in just a few moments.

Q. You testified that your testing did indicate that this was a highly fractured reservoir?

A. Yes, the testing does indicate that, as well as the drilling characteristics, as well as reference to the resistivity log that we did run. On hearsay evidence, the Yates wells also are highly fractured. They ran devices in the hole that more exactly treat that subject. I have not seen those logs, though.

EXAMINER CATANACH: I think that's all I have for now. The witness may be excused, if there's nothing further.

MR. CARR: Nothing further.

MR. CARROLL: No.

EXAMINER CATANACH: Let's take a 10-minute break.

(Thereupon, a recess was taken.)

EXAMINER CATANACH: Call the hearing back to order. Mr. Carr, you may proceed.

MR. CARR: At this time we call Mr. Davis.

PAUL H. DAVIS

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

EXAMINATION

BY MR. CARR:

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

A. Paul H. Davis.

Q. Mr. Davis, where do you reside?

A. In Midland, Texas.

Q. What do you do for a living?

A. I work for Williamson Petroleum Consultants as a consulting engineer.

Q. Have you been employed as a consulting engineer by Stevens Operating Corporation in this case?

A. Yes, I have.

Q. Have you previously testified before the

New Mexico Oil Conservation Division?

A. Yes, sir, I have.

Q. How long ago was that?

A. It's been approximately 10 years ago.

Q. Could you briefly review for Mr. Catanach your educational background and work experience?

A. Certainly. I spent 19 years with a major oil company; six years of that was as a field engineer, seven years as a reservoir engineer, and another six years as a unitization and proration engineer. After that I went to work for Williamson and I've worked for them for the past 10 years in primarily reservoir work.

Q. Are you familiar with the application filed in this case on behalf of Stevens Operating Corporation?

A. Yes, I am.

Q. Have you made a study of the area?

A. Yes, I have.

MR. CARR: We tender Mr. Davis as an expert witness in petroleum engineering.

EXAMINER CATANACH: He is so qualified.

Q. Mr. Davis, have you prepared certain exhibits for presentation here today?

A. Yes, I have.

Q. Would you refer to what has been marked as Davis Exhibit 5, identify this exhibit and then review it for the Examiner?

A. Yes. Exhibit No. 5 is a report from Schlumberger Well Services in reference to production loading and testing which they did on the McBride State Com. Well #1. This testing was done to undertake an extensive testing program to determine two things: One was the producing rates from particular zones, and the other was the type of fluid from each zone.

In order to accomplish this purpose, Schlumberger measured four different quantities simultaneously and used them to come up with solutions--with answers. The first measuring device they used was an adaptable Packer flowmeter which, in essence, measures the rate of flow using a spinner survey. It also incorporates a flexible diaphragm that puts all of the fluid through that spinner survey.

The second device they used was a gradiomanometer. This measures the differential pressure between two points, and its primary purpose is to determine the fluid density is at any place and also to distinguish what is the gas and oil and

water.

The third device that was used is a temperature survey, and this is to get a temperature profile under static conditions and then to get one under flowing conditions, and make comparisons with that temperature profile and make determinations from that.

The fourth and final device that was used is called a manometer, and this is simply a pressure measuring device in the hole and it simply measures bottomhole pressure, and it's used to make corrections from reservoir conditions to surface conditions in the calculations.

So, all four of these surveys are run simultaneously. We have the results of four different runs, the static test and three flowing tests that I would like to review. If you'll turn back to--

Q. Are these the logs that are attached to the report?

A. That's correct, as figures 1 through 4.

Q. Would you go to figure 1, identify which test this was and then explain the results?

A. Okay. Figure 1 is the log that depicts the well in a shut-in condition. I think I need to perhaps go over what the curves are and how they

relate to each other so that we can have some understanding of what we're looking at.

The curve on the left is the Gamma Ray curve, just a standard Gamma Ray curve. Just to the right of that, and almost on top of the centerline of the left-hand track, you can see that it departs from that down in the lower part of the curve, is the manometer or pressure reading. You'll notice that it changes in gradiant at about 6345, from a slope to just a straight line.

The next thing I wanted to point out was the perforations which are just to the left of the bore hole. They're numbers and start with number three near the top, number one and two being packer reflections, and they do skip certain numbers but that's because there's two perforations, too close to each other to get both of them on here. These are the perforations that are in the well.

The logs on the right-hand side of the log, first of all, it's been highlighted in yellow, is the temperature survey. This temperature survey goes, as indicated above, from 120 to 130 degrees Fahrenheit. The blue curves are fluid density, which is measured by the gradiomanometer, and the solid line is the fluid density and its scale is at the top and it goes

from zero to one to two. One in the center would be the density of water in grams per cc. The dashed lines, then, that are also highlighted in blue, are nothing more than just an amplified fluid density, and we do not have a scale on here to tell what those specific values are.

Now, the specific gravity, for instance, that's shown on the blue curve, would have a reading of approximately 1.4, which we know is probably much higher than what the formation of water actually is, and so Schlumberger explained that by saying that there were materials that got into their tool on the way down and as a result it always gave a higher reading than what it should give, but it's relative. So this is a qualitative type log rather than a quantitative.

Q. What does it show you?

A. This particular log shows, down at the bottom, a depth of 6347 feet there is a change in the density to show that we've gone from the water into the oil column.

Just above that, then, at 6334, there's a second change in rate. It shows where the gas is. This is where the fluids are in the wellbore and they don't necessarily reflect where they are in the well

formation.

Now, incidentally, for instance on this particular one, we've had the oil/water contact at 6405, which is just almost down off the page. That's the formation for oil/water contact.

Q. Let's go to figure 2 and I would ask you to review what's shown thereon.

A. On figure 2, we have the same logs. We have added one additional log at this time, of course, because this figure 2 is with the well flowing at a rate of 2.6 million cubic feet per day and 250 barrels of oil per day. Let's go on a curve-by-curve basis, similar to what we did before.

The pressure gradiant on the left has changed the gradiant. You can see that instead of following the center, the left-hand log straight up, it is bearing to the left, indicating a lower pressure at that point, which means that there is gas in the column and that's what it is like in the column at that point. It is more constant gradiant.

The fluid density curve has a deflection that's moved up from the last curve from about 6347 to 6327, and the temperature curve has a deflection also at about 6322, and this deflection here can be interpreted as oil entering.

The curve that we mentioned, the red curve, which is the first time we've seen it, this is the results of the spinner survey. If you start at the bottom from that, we'll notice it shows zero fluid entry at a point about 6348. I need to back up one time because there on the right-hand part of the bore hole, it has little dots. Those dots indicate where the spinner survey was taken at each survey as you go up the hole. There was probably some movement in the bore hole down below the indicated point there at 6334, because the spinner will not operate at rates below 10 barrels of oil per day.

We can tell from the density curve that there's mostly gas movement above 6332, and mostly oil movement below that point. If we follow the red curve from the bottom, at the point there at 6314, it still shows the 250 barrels of oil per day which is the maximum that will produce from this well at this rate, and just some gas.

The next point up shows mostly gas entry, and as the spinner survey is moved up the hole, we show more and more gas production but with the same oil production. This is a pretty linear function.

Q. Anything else on figure 2?

A. I might mention one thing on the fluid

density curve. It kind of gets wavy up towards the top of it, and we feel like it's due to changes in the gas column. There's an increase in gas in the liquids.

Q. Let's go now to figure 3. Could you explain what this shows?

A. Figure 3, we reduced the flow rate from 2.6 million a day to 1.5 million a day, and at this rate we get 50 barrels of oil per day along with it, as opposed to the 250 barrels a day we get at the 2.6 million rate.

The general description here is that almost 100 percent of the oil comes from below 6314 depth, because that's the first interval where we show the 50 barrels per day which is the maximum fluid entry that we show at this rate. This doesn't have the linear shape of the curve that we had at the higher rate.

We don't see a lot of gas entry, really, until we get up to around 3258, where it departs and goes into higher gas rates. As an example of that, from the three perforations above 6248, 58 percent of the gas comes from there. If we look at the very top perforation, the number three, over 29 percent of the total gas entering the well comes from that one perforation.

Q. Let's go on to figure 4.

A. In figure 4, we begin to reduce the rate of flow at this time to 680 Mcf per day, and we've got zero oil production as a result of it. If you look at the spinner survey, we show that over 100 percent of the gas is entering above 6274 with no movement in the wellbore below that point.

Q. Mr. Davis, what conclusions can you draw from this information?

A. I think one of the conclusions I have would be in the next exhibit, if we could.

Q. Let's go to Exhibit No. 6. I would ask you to identify this?

A. Okay. Exhibit No. 6 is kind of a graphic illustration of the four logs that we just looked at. One thing, of course, that's evident from the tests that were run, the well was producing oil from the lower perforations and gas from the upper perforations. I think that's basic.

As the gas rate decreases, the oil also decreases until you get to the 680 Mcf per day, at which no oil is produced. That we can demonstrate on this particular log by showing those levels within the wellbore to the first fluid movement at the various rates of flow.

If we start from the bottom up, there at 6367, wells were producing at a rate of 2.6 million day, 250 barrels of oil a day, GOR is at 10,400. If we reduce that rate to 1.5 million a day we get 50 barrels of oil, GOR increases to 30,000. This happens there at 6310.

If we go up to what we show as the point of lowest fluid movement at 6258 at the rate of 680 Mcf a day, we get no oil. The GOR here we put at 680,000. That would assume one barrel of liquid produced. Mathematically it's infinite.

Q. Could you summarize now exactly your conclusions?

A. The conclusion from that is that as you reduce the rate of the flow from the well, that you produce less and less liquids until at lower rates you produce no liquid at all.

Q. At those lower rates the oil and the liquid is left in the reservoir?

A. That's right.

Q. Are you ready to go to Exhibit 7?

A. Yes.

Q. Could you identify what Exhibit 7 is?

A. Exhibit No. 7 is actually three different tests that were run on the McBride State Well #1 at

different times. The first flow test was taken during the Schlumberger testing. These rates that are shown on this particular exhibit are actually the surface flow rates. You compare this, then, to what Schlumberger shows on their logs and they compared it very favorably in value--close agreement.

Q. Page 1 is the November 30 test. Were all perforations tested at this time?

A. Okay. This is the November 15th test we're looking at, and this is all perforations that are being tested.

Q. What was the length of that test?

A. The total length of the test was from 10:15 in the morning until 6:30 at night was the total run of the test, so a relatively short length of time.

Q. Let's go to the next page.

A. Okay. The test on the McBride State #1, just testing the lower perforations by moving the packer down between the upper and the lower perforations; that is, between the gas and the oil zones. These tests were run at a fairly constant rate, at about a million and a half a day as we go down to larger choke settings in time.

The one thing that I think should be mentioned here is that there is an increase, as we

increase the amount of gas and the amount of fluids that are produced with it; for instance, from the first test it goes from 80 barrels a day to the next rate of 144 to 170, and the last rate drops to 153, but this is the first rate at which we see some water production. So there is some evidence, at least in this test, there is some water coning in the reservoir.

Q. Anything else on Exhibit No. 7?

A. One comment is that at the GORs that are indicated on the test that was taken on December 19th will be quite similar to the GORs that we'll see on the December 21st test, which is of the upper perforations of the annulus of the well.

I have the data from this flow test plotted as the next exhibit but there are a couple of things I would like to point out before we go to that exhibit. In the test that was between 11:30 and 12:15 p.m., that's the first time during that period that the condensate turned to oil. So it's definitely an oil reservoir. We had condensate to start with, but after a certain amount of flow period, we went to an actual oil rate.

And the next rate, you can see where that gravity was measured at 42.5, which has some influence

of condensate from it. We feel like the actual gravity out here is probably closer to 35 degree API.

Q. Are you ready to go to your graph?

A. Yes.

Q. Take a look at that and explain to Mr. Catanach what you've depicted on this exhibit?

A. This is really the data from the previous exhibit. On the left-hand column we have scales showing the rate of gas production the rate of oil production and the rate of water production. I would point out, too, that the oil and the water are on the same scale, so that those volumes of oil and water would be compared.

Also, in the left-hand scale we show the choke settings at each of the different flow rates for these six test rates. Over in the right-hand margin is the scale for the GOR, which is also plotted. About the first flow period at the bottom is for 90 minutes, and the flow period of each of the additional tests are shown at the bottom.

The first 90-minute flow period did not have fluid with it, but this well had been shut in and it was probably unloading fluid overnight and what fluid had built up during that period of time. The second flow period started at the time the condensate

turned to oil, so that that should be a more representative value. You can see, as flow rate decreased on the gas production, it also decreased on the oil production and the water production. But the strange thing about it is that the GOR increased during this same period.

The GOR went to a maximum value that exceeded 20,000 to 1, which is what we had requested in the field rules. The last test was for a very short time period and we feel like it really hadn't stabilized in, and that's probably what accounts for the oil rate still going down at that time.

Q. Basically the information on these exhibits confirmed Schlumberger's conclusion?

A. Yes. This is just another test that's independent of those tests.

Q. Mr. Davis, do you have an opinion as to what flow rates are necessary if the oil under the Stevens tract is to be produced?

A. The rate that we feel like we need in order to produce the fluids that are in the well is 2.5 million a day.

Q. In your opinion, if Stevens' application is granted, will waste be prevented?

A. Yes, we think it will, in the overall

picture. Of course, we understand and appreciate this is a water dry reservoir, we have a gas cap involved. There is risk in losing some of that production into the gas cap, the residual being nonrecoverable.

At this time I believe there is an active water drive but the water influx that we have may not replace the hydrocarbons that are being withdrawn so this tells us that it may be just a partial water drive rather than a full water drive. This is something that we don't know at this time. It's also possible, as was mentioned earlier, that the reservoir could be oil saturated. Therefore, there would be no loss as far as the oil moving to the gas cap and having a residual saturation if you had depletion.

Q. At this point in time, is it possible to determine the maximum efficient rate at which to produce this reservoir?

A. No, I think the reservoir is way too early. There's been so little withdrawal from that reservoir, and we need to have a test allowable that's sufficient in order to test that.

Q. Could you explain basically what Stevens proposes to do during this testing period? What kinds of tests or logs will be run?

A. One log we've already ran that will have to

be rerun is a TDT log, to try to determine where the oil/water contact is and the gas/oil contact is.

Q. That's a TDT?

A. TDT, yes, thermal delay time. Of course, the second thing we would want to run would be periodic pressure tests, pressure tests daily as far as the flow rates go, bottomhole pressure on a periodic basis.

Q. Is it going to be possible to move towards a balance whereby you can produce the reservoir at a more efficient rate?

A. That's the basis of what we're trying to find here. It's what Stevens wants, just to get all that we can out of it but at a maximum efficient rate, and that's what we're trying to calculate.

Q. Do you foresee harm to the reservoir by implementing a test program to acquire this information?

A. There's always that danger. But at the rate that we've asked for--I haven't done any exact calculations on this--but we're talking on the range of five percent of the total reservoir volume. With that volume, that's pretty minimal in order to determine what the MER should be for the field.

Q. In your opinion, would it be prudent to go

forward with the development of the reservoir without first obtaining this additional information?

A. No. Well, I think that it would certainly be better to have the information before we do that.

Q. When you talk about removing five percent of the reservoir, you mean the total reservoir or the reservoir that exists under the Stevens tract?

A. Those calculations were made based on the original gas in place on what we calculated as a 320-acre proration unit.

Q. The present recommendation by Stevens proposes 320-acre development. Do you have an opinion on that?

A. Well, of course, the original recommendation or request by Stevens was for 320 acres. As we explained, we had done that primarily because of the Yates well. We feel like that we could probably live with 160-acre spacing at this time.

Q. What about the gas/oil ratio of 20,000 to 1? Is that something you believe is necessary to effectively test and obtain data on the reservoir during the test period?

A. We hope it will be a maximum rate, GOR rate, that we would ever have to use. We need to have that flexibility in our testing in order to define the

reservoir.

Q. You could adjust this rate as you attempt to establish the maximum efficient rate for producing the reservoir?

A. Yes.

Q. In your opinion, will granting this application be in the best interest of conservation and the prevention of waste?

A. Yes, it would.

Q. Is Exhibit 9 an affidavit and accompanying letter showing that notice of the hearing had been given as required by Oil Conservation Division rules?

A. Yes, it is.

MR. CARR: At this time, Mr. Examiner, we would offer Stevens Exhibits 5 through 8, and also 9, which is the affidavit.

EXAMINER CATANACH: Exhibits 5 through 9 will be admitted as evidence.

Q. Do you have anything further to add to your testimony at this time?

A. No.

MR. CARR: Pass the witness.

EXAMINATION

BY MR. CARROLL:

Q. Mr. Davis, let me ask you some general

questions and then we'll go into some more specifics directed at your testimony. As a general proposition, are high permeability vertical fractures consistent with a transition zone 75-foot thick?

A. Probably.

Q. Probably? The McBride well, was it completed as a gas well or as an oil well, according to the records of the Oil Conservation Division?

A. I believe it was originally filed as an oil well--no, as a gas well? and later refiled as an oil well.

Q. Okay. If you have a water drive in a reservoir, is it better to keep the gas in a gas cap--suppose we do have, and this is kind of a hypothetical--and we have a reservoir, an oil reservoir with a water drive and a gas cap in place, is it better to keep that gas in the gas cap or try to preserve that gas or to let the oil move into the gas cap?

A. If there's no prior oil saturation in the gas cap, it would be better to keep it out.

Q. The exhibit that had the reports of the testing, I guess that's Exhibit 7, the test periods, that was just during the latter part of last year, were they not, November and December tests?

A. That's right. I think all three of these tests were in the December period.

Q. How much water was produced during this testing?

A. Total amount? I don't know the answer to that. We know from Exhibit 8 what was produced at the difference rates, but I don't know what the total amount of water is. We feel like the water is probably more than any load water that was there, if that's what you're asking. It exceeded the load volume.

Q. Has any further testing been performed on this McBride well since the first of the year, January, February?

A. There have been some recent tests in the last few days, and I saw one of them just a few minutes ago and that's really the only information I have. They have been tested, though.

Q. What you saw, did that depict any significant difference from the tests that were taken back in December of 1989?

A. No. The basic thing that was depicted there is that there was communication in the test between the upper and lower perforations.

Q. All right.

A. We saw a pressure drop, for instance, in the upper perforation than in the lower perforations.

Q. What you did, apparently you used a packer to test the upper perforations as opposed to the lower perforations, and when you had the lower ones squeezed off you saw a decrease in pressure in both areas?

A. That's right. And the packer really has not moved since the December tests were taken.

Q. That packer, it sat, then, at the approximate area of what you considered to be the gas/oil contact?

A. Yes, it is.

Q. Was any water produced during that test in February?

A. I don't know the answer to that.

Q. Judging from what you've just told us and the fact that Stevens knows or at least contends that it has set the packer in the area of the gas/oil contact, can you tell me why Stevens has perforated across both areas, both across the oil column and into the gas area?

A. The only reason I would know, they wanted to test both intervals to see what was there and what rates would be produced from those, so both those intervals were opened.

Q. Now, I guess a shorthand conclusion to be drawn from the Schlumberger testing is that in fact the gas comes from the upper perfs and the oil comes from the lower perfs? Is that basically what all of these different tests indicated?

A. That's one of the things they indicate, yes.

Q. And the testing that you performed out there indicated that the more gas you produced and the more--and as you produce gas from a well, you reduce the pressure in the wellbore, do you not?

A. Yes.

Q. Weren't these tests actually showing that as you produced more gas, the pressure in the wellbore through these upper perfs were reduced to allow the oil to come in?

A. Would you repeat that question?

Q. Okay. What, basically, your test showed out there, is that given the assumption that as you produce gas you produce the gas pressure in the wellbore, isn't it true that what you're really saying is you had to draw down the pressure in the wellbore caused by the gas to allow the oil to come in through the lower perfs?

A. The test that you have referenced there,

the most recent test, those were tests taken of the production to load the packer, as I understand it.

Q. Well, Mr. Davis, isn't it true that if you squeezed off the upper perfs that you could probably do away with the problem you're experiencing out there, having to produce a high rate of gas to get any oil production at all?

A. No. I believe that with the pressure we have in that area, you're going to have communication between the oil and gas zone. That's complete communication as indicated by the tests that were recently taken in the well.

Q. Let's assume we squeezed off the upper perfs. You're saying that because of the fracturing that's in this particular pool, if you squeezed off the upper perfs, the gas is going to communicate down through these fractures and prevent the oil from coming into the wellbore, then, if you're just open in the oil column?

A. One of the things these two tests showed that I indicated a while ago was that we had almost the same GOR from below the packer as we did above the packer, which would indicate that you're really not changing, I guess, the flow patterns in the reservoir, at least very far out in the reservoir, by producing

from either the upper zone or the lower zone.

Q. Figure 3 and figure 4 to the Schlumberger exhibit didn't show that. It, in fact, showed that when you were producing your oil down in the lower zones that you got almost no gas the lower the perf with your production of oil?

And I'm sorry, I don't have my figure 3 and 4 here. It would be Exhibit 5. I think Mr. Carr referred to them as figures.

A. They are indicated as figures, as attachments to the letter.

Q. In particular, looking at figure 3, I guess it's your spinner curve, you show that the first point where you have oil coming in, you have 50 barrels of oil only; then the next point you have 50 barrels of oil with just some gas. In fact, if you were producing, then, from those lower perfs, you wouldn't have a problem except in gas, would you?

A. Just on the basis of this survey you might be able to presume that, but this is a test of very short duration. I think once you establish a gas saturation, that you're going to have the channeling.

Q. Well, Mr. Davis, did you do any studies to determine if, in fact Mr. Davis could actually perf lower than the perforations that are now existing in

the McBride well?

A. No, I didn't.

Q. Have you looked at the cement bond log?

A. I have a copy of it, but I really didn't look at it as part of my study.

Q. It is true that Stevens made no effort to keep the oil and gas zoned separate, is that correct?

A. That's correct.

Q. As far as you know, both zones were perforated and all of those perforations were acidized, were they not?

A. Yes, I believe that's right.

Q. I apologize. I didn't quite catch it when you gave an opinion as to, I think it was, the rate of production that you think would be applicable or best for this McBride well, and I think you gave the figure of 2.5. I wasn't sure exactly if that was what your opinion was. I missed the first part of it. Could you restate that for me, just so I know I'm tracking along with you?

A. Yes. We feel like we need a rate of 2.5 million per day in order to make the tests that we feel like we need to sufficiently produce the reservoir.

Q. Have you done any calculations as to how

much oil would then be produced at 2.5 million per day?

A. No, I haven't.

Q. Have you done calculations that necessitate an oil production of 650 barrels a day?

A. No, sir. That 650 barrels a day is really an arbitrary amount. It's somewhat based on the ratio of what 80 acres to 160 acres is, versus 160 to 320 acres.

Q. So at least you've performed no studies which dictates 650 as a magic number?

A. No, sir, we have not.

Q. If you say that two and a half million Mcf is the ideal number that you think is necessary to get the kind of data that you want, why would you ask for a 20,000 to 1 gas/oil ratio? That would, essentially, allow you to produce 13 million Mcf per day.

A. The reason is, I guess, we don't want to be limited by our testing in trying to determine what is the MER of the reservoir. The actual rate we're going to produce out here will probably be in the neighborhood of two and a half million a day.

Q. What you're saying is that you may have an error factor of at least five times out there, at least to your reasoning you've got here? At least you

want to allow yourselves to be able to produce at least five times more gas?

A. Well, under the initial request, that's true.

Q. Now, have you done a calculation of the original oil in place in this pool?

A. I did a calculation of the original oil in place under the 320-acre proration unit.

Q. What proration unit are we talking about? The north half of Section 28?

A. Yes, that's right.

Q. Did you do a calculation of the original gas in place understand that same proration unit?

A. Yes, sir.

Q. What are the numbers you got for that 320-acre spacing unit?

A. Original gas in place was 34.4 Bcf and the oil in place was 13,000,000 barrels of oil.

Q. What numbers did you utilize to come up with these figures or these numbers?

A. This is basically from the log of Schlumberger's and their integrated log calculations.

Q. What you're assuming, based on that log and the wellbore of the McBride well, you've extrapolated whatever the porosity, whatever the thickness of the

different pay is, you've extrapolated from that wellbore out, to include or encompass the whole 320 acres in that proration?

A. That would be what a 320-acre proration would, with that same thickness, would have in place. We've downgraded that for structure and for the faulting that diminishes the size of the reservoir, and also for recovery.

Q. What kind of figures did you use in downgrading?

A. As far as the distance to the fault we said instead of having the 320 acres, that we probably had 20 percent less than that. Just a rough idea of the distance we've reduced between the two faults as opposed to a full mile across there.

The down structure we know will pinch out on the edges of the reservoir. There we estimated maybe a reduction of 30 percent. Then, if we had a recovery of 80 percent of the reserves that were remaining, we're talking about a 13.76 Bcf. This is just rough numbers, and aren't meant to be precise engineer numbers. They're ballpark numbers.

Q. All right. That 13 Bcf, is that what you're saying is recoverable gas?

A. Recoverable gas from the gas cap.

Q. As opposed to the 34.4 original gas in place?

A. Which is original gas in place, assuming that the formation thickness was the same and we had a full 320 acres.

Q. This 34.4 Bcf, was that number arrived at after you did the reductions that you just described for us, the 20 percent in acreage and 30 percent in structure?

A. No.

Q. But the 13.4 Bcf recoverable, you did use that?

A. 13.76, yes.

Q. 13.76. Okay. Excuse me. Now, you gave us a figure, or I think you gave a figure, I'm not exactly sure, but you used a number of five percent. Are you saying that if you allowed the production to go at the rates asked for by Mr. Stevens, that you would only see a possible five percent reduction in the gas in the gas cap? Was that what your testimony was?

A. Well, that's based on the calculations of this one well which we assumed would apply to areas outside that proration.

Q. Your figure of five percent, were you using

13 million a day production figures or were you using 2.5 million production figures?

A. 2.5.

Q. So your reduction of the gas cap, if it did in fact go up to the 20,000 to 1 that is being asked for, could, in fact, increase that five percent figure by five times, couldn't it?

A. It would increase it. I don't know by how much, but it certainly would increase it.

Q. You've described two sets of tests that you want to do, the PDT to allow you to, I guess, reconfirm the oil water contact and the gas water contact?

A. Reconfirm or see how much they've moved from over a period of time.

Q. All right. So you find this out. What is that going to tell you? What is that going to dictate? In other words, how is that information, the contact's moved X inches or feet or what have you, what's that going to tell you with respect to how this reservoir should be produced?

A. We'll know whether the rate of water influx is equal to the rate of withdrawals of gas and oil from the reservoir. We'll be able to make reservoir calculations that will, I believe, tell us whether the

oil zone will move up into the gas cap and at those rates, whether we could make it even produce at a higher rate and it wouldn't move, or whether we need to produce at a lower rate. But those are things we would have no way of knowing now, and need to have the test in order to determine it.

Q. It's quite possible that at the end of your testing you could determine that in fact the production rates asked for by Stevens and maybe used during this period of time were, in fact, too great, and that a depletion of the gas cap could have occurred? It's one of the possible results, isn't it?

A. I don't think a depletion of the gas cap could possibly have occurred, but there may be some damage. That's something that we just don't know at this point. It would be a small amount of damage when we're talking about five percent of the total.

Q. But if we're talking about 15 or 20 percent of the reserves, is that an insignificant amount of damage to the reservoir?

A. Well, it does need to be a significant amount.

Q. And if, in fact--and we're using the term "damage"--if, in fact, we the reservoir as we're talking about or as you're talking about, that damage

would equate into waste, would it not?

A. It would, there again assuming that there wasn't any oil saturation in the gas cap to start with.

MR. CARROLL: I have no further questions Mr. Examiner.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Davis, the proposed testing, is two and a half million is day satisfactory for this kind of test, or do you actually want more flexibility to increase that?

A. We feel since we have additional information now that we could probably do our testing over a period of nine months at a rate of two and a half million and get the results that we needed.

Q. And the gas/oil ratio that you would need at the two and a half million rate, would be less than 20,000 to 1, would it not?

A. Yes, it would, and I haven't calculated what it would be; but yes, it would.

Q. Do you have the data you need to calculate that?

A. Yes, sir. We're speaking of the GOR now?

Q. Right.

A. I think rather than calculate that, I think the rate that you see on our Exhibit No. 8 would indicate that we could go over 20,000 to 1, but we could probably live with a 15,000 to 1 ratio.

Q. So you think 15,000 would be adequate?

A. That would be a maximum rate that we would need to have. We wouldn't expect, really, to go to that high of a rate, but we would like to be able to do it if it became necessary, in order to test the wells.

Q. In the test that you're proposing to conduct, would the well be produced at a constant rate for all this period of time, or would you vary the rates?

A. No, I think we'd need to vary those rates. We haven't set up any kind of a program for that, but I think they would definitely need to be varied.

Q. Two and a half million would be your maximum, and from there you might come down some in your testing?

A. Yes, sir. I think the results of those tests as we took them, as far as the pressure tests and the TDT logs, would dictate how far we needed to come down or how far we needed to go with our testing in order to determine the MER for the field.

Q. Why do you feel you need 90 days for the test?

A. Nine months.

Q. I mean nine months.

A. Basically, we want to be able to produce a significant reservoir in volume, and we don't think that one or even two percent is sufficient in order to make a judgment of that kind. For instance, an example, in P/Z work generally we say well, we don't have good data until we get to 10 percent of the reservoir volume. What we're asking for here is somewhat in the range of five percent of the reservoir volume, and we feel we need that before we can get data that we can rely on.

EXAMINER CATANACH: I believe that's all I have of the witness at this time. He may be excused.

MR. CARR: At this time I call Don Stevens.

DONALD G. STEVENS

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

EXAMINATION

BY MR. CARR:

Q. Will you state your full name for the record, please.

A. My name is Donald G. Stevens.
Q. Where do you reside?
A. Roswell, New Mexico, I'm president of Stevens Operating Corporation.
Q. And Stevens Operating Corporation is the Applicant in this case?
A. Yes.
Q. Have you testified in the past?
A. Yes, I have.
Q. Were your qualifications accepted at that time and made a matter of record?
A. They were.
Q. How were you qualified then?
A. As an expert witness.
Q. In what field? Are you a petroleum engineer?
A. No, I'm an oil and gas producer with considerable experience in petroleum engineering, geology, oil and gas production, gauging, testing, all--
Q. Is this practical experience, Mr. Stevens?
A. Some of it is practical, some of it is not so practical.
Q. Mr. Stevens, are you familiar with the well and the pool that are the subject of this hearing?

A. Yes, I am.

Q. Have you studied the well and the pool?

A. Considerably.

MR. CARR: Are the witness's qualifications acceptable? He's not going to make detailed engineering conclusions.

EXAMINER CATANACH: He is so qualified.

Q. Mr. Stevens, when did you drill your McBride well?

A. It was in October and we completed it in November.

Q. When you completed it, in your opinion did you have an oil well or a gas well?

A. We initially thought we had a gas well. The offset well was presumably a gas well, but it only perforated the upper porosity. We had no evidence that it might be other than that, other than a drill stem test they had made in the upper which showed 2.1 barrels of 28-gravity oil, which was very confusing to us.

In any case, we perforated our well as a gas well. We saw a greater amount of what we thought at the time were condensate gas fractions, the C-3 and the C-2 at the bottom more so, and we felt that if we perforated the entire section, we might have a chance

of getting more condensate which, from we thought at the time, looked as if it were at the bottom of the well in the lower porosity.

When we completed the well, it was a gas well. It floated. The initial test showed some strange hydrocarbons which surely looked like oil. It was a jelly-like substance, highly parafinic. It wouldn't pour out of a bottle, which kind of confused us, so therefore we determined to make the additional tests which were the Schlumberger tests, which have been previously testified to.

Q. The reason that you perforated above and below what is now what you believe to be the gas/oil contact was because of the production of condensates, is that correct?

A. Yes. We thought we would get gas and gas condensate.

Q. It was at that time you felt that the entire zone might be productive of gas, so you perforated the entire zone?

A. Yes, and it was oil/water contact, pretty obviously, lower than where we had perforated, but the porosity wasn't that particularly good. We perforated, presuming there was vertical fractures based on the drilling and samples and all the other

evidence we had, we didn't want to perforate too low, fearful of water. Generally speaking, you tend to have a water drive. We don't know yet that this does, but that was the tendency.

I might mention a couple of questions which I might be able to answer, asked of our previous witness that I might get out of the way since I'm a little more familiar with it having been there, the last tests that were made in the last two or three days prior to this test showed slightly higher gas/oil ratios and slightly higher water cuts. The water cuts again, we have produced these wells only for short periods of time, only to determine some data for this hearing. We didn't produce them very long simply because we didn't want to waste anymore gas than was necessary.

The water ratios varied. There was very little difference between producing the well through the lower oil perforations with the packer right above those oil perforations. You make almost as much gas from the, quote, oil perforations as you make from the gas perforations, which are now above the packer and what we know as the gas zone today, indicating to us considerable heavy fracturing. When you open up the oil perforations and have the gas zone shut off behind

the annulus, and you make a tremendous amount of gas, you have to have communication between the two.

Q. Do you believe you could squeeze off the upper perforations and thereby produce the oil in this reservoir?

A. Oh, there is a slight possibility. My experience and, I think, the industry experience with squeezing off producing zones, is extremely poor in success ratios. It can happen, but it's extremely rare. It usually runs on. There's really no reason to, as far as we are concerned, at least during this testing period and even afterward. We have no proof at this juncture that this would result in waste.

There has been testimony and inferences that if the oil column moves up into the gas column, there may be waste. That may well be true if you have a dry gas rock up there; but if you have an oil saturated rock, indicating the reservoir was perhaps once an oil zone and gas came in later, the only loss would be the residual oil saturation and that's already been lost when the gas may go out.

Again, this is part of the proof we need to determine during this testing period. So, to suggest that an excellent, magnificent, well such as this be squeezed to try to shut off some excellent, wonderful

gas production without any greater knowledge than we have, I think is premature.

Q. In your experience in the oil and gas business, is the performance of this particular well and pool unique to you?

A. Well, it's not unique but it's relatively rare for this part of the country. Most don't make water when you add gas and oil. Again, I think that's indicative of the heavy fracturing that must be present in the reservoir, and all evidence indicates that.

Q. To make decisions about how you are to go forward with further development of the reservoir, is it essential that you obtain additional information?

A. I think so. The oil on the H-drill stem test in the gas zone indicates that that reservoir may have been oil wet. In that case, we have no concern with moving the oil column into the gas column. We don't know this. If it is dry gas rock, then we have as great a concern as Yates apparently is evidencing by their cross-examination questions.

The BTU of the Yates gas, at 1235 in their #6 well out of the oil zone, 1235 BTU, whereas our well tested 1050 BTU, indicates quite a difference in the gas. The gas and the oil did come from a

different place. Do we have water drive? There's some evidence of it, but there's no proof of it. It will take production to prove it. There's no great harm, even if all of the factors militate against--we hope they don't--if this is a dry gas reservoir rock there, yes, there is a risk that we will waste, if the term be used, a little bit of oil and gas.

Conversely, this Commission is concerned with correlative rights, to go back to the state-wide 2,000 to 1 gas/oil ratio as recommended by Yates Petroleum Corporation, means that that well doesn't produce. We can't recover the oil underlying this tract as the Commission rules, regs and statutes state.

We do have water coning in this field at the higher rates. When you lower the rate, the water doesn't cone as much, but the gas decreases. To my understanding, there's no problem with water coning in a reservoir. It may be a problem in the well, but there's no long-term damage to the reservoir. So that doesn't concern us, in any case.

We think we need the time to run the TDT log so that we can see and produce enough gas so we can see if, in fact, the oil column is moving up into the gas column. If we can't flow gas and oil, it's

impossible to rate.

Q. You have proposed 20,000 to 1 gas/oil ratio, 650 barrels per day. Is it your intention to produce at these levels, or are these just maximums?

A. No, again, as is borne out many times, 20,000 to 1, I think, we need based upon a lesser amount of oil production. We don't know exactly what that is, but if we got two and a half million a day, then my presumption is we would be producing somewhere around 150 to 200 to 250 barrels a day. So we don't need the 650. That was an early-on request based upon trying to make sure that Yates and their well that they had and the oil well they might be drilling wouldn't be penalized by the fact that we found the oil zone, and we didn't want them to object to what we were going to propose during this testing period. And it turned itself around the other direction. They found more oil and feel that they don't want to produce the gas during this period.

Q. If some relief is not obtained in terms of adjustment to producing rate or additional data for you, is there any way that you can produce the oil that underlies this tract, in your opinion?

A. Not that we know of. When you shut down that gas/oil ratio to 2,000 to 1, you cannot produce

oil, period. Squeezing it, I think, just isn't practical. There's an outside chance it can work, but it surely isn't practical.

Q. If additional data is obtained during the test period, do you believe that will assist you and other operators in developing this reservoir in the most efficient way possible?

A. I would certainly think so.

Q. Would that, then, tend to reduce the potential for waste of hydrocarbons from this pool?

A. Yes, it will. I guess when we first started talking about this 20,000 to 1 gas/oil ratio and 320-acre spacing, the purpose was to prevent a lot of early-on rules that kept we and Yates from developing this field properly. The only way you can develop the property is to get the proper information, and you can't get the information when you can't produce your well more than 444,000 a day.

Q. Do you have anything further to add to your testimony?

A. No, sir.

MR. CARR: That concludes my examination of Mr. Stevens.

EXAMINER CATANACH: Mr. Carroll.

EXAMINATION

BY MR. CARROLL:

Q. Mr. Stevens, early on in your testimony you indicated that the new tests that were just run in the last few days on your McBride well, indicated slightly higher gas/oil ratios?

A. That's correct.

Q. What do you mean by slightly higher? How do you define that?

A. Maximum, I think we had is 15,000 to 1. We generally, however, produced at a higher rate and we didn't produce at the lower rates as we had previously because we wanted to produce enough water to determine if it were really formation water as opposed to treating water. If we had produced it at the lower rates, I feel sure our gas/oil ratios would have climbed substantially as they had the prior rates.

Q. Prior to this time, you say this was about 15,000 to 1. Prior to this time what was the maximum?

A. We had a 20- or a 22,000 to 1 at a low flow rate, and that was evidence which was presented by the engineer. All of this flow rate data has been submitted to Yates, too, for their information.

Q. You said that the water cuts were slightly higher. Again, what do you mean by "slightly higher"?

A. Well, they're variable. We had such short flow rates, you can't really say. In some cases we got as high as a 50 percent water cut. In some cases they're as high as five percent or none.

My opinion is that a sustained flow rate of about 2.5 million, that the percentage would be somewhere around 20 percent. But that's merely an untested opinion that can only be determined by more flowing.

Q. What were the time periods that you tested this well during the last test?

A. They were approximately five hours a day on the Saturday, Sunday and Monday prior to this date.

Q. Five hours each day?

A. Approximately.

Q. Based on your information, would it be possible to perforate the McBride well to stay within that oil column?

A. I think you can stay within the oil column. I have a concern that you're closer to the oil water transition zone and that you may increase your water cut by so doing. Plus, you have lower porosity down there, so that would mean you would get a lesser flow. We would prefer not doing so simply because it might result in the wells being even more

water productive.

Q. As I understand your position, Mr. Stevens, it is basically that unless you get what you're asking, you're unable to produce oil at least in the situation or how the well is now completed and where the perforations now exist?

A. If it were 2,000 to 1? Was that your question?

Q. If you don't get what you're asking. I believe your well is now presently--

A. Or something like what we're asking, yes, that's correct.

Q. You also stated that it was not practical to change the way your well was completed?

A. It's probably not practical. The risk, when you're talking about squeezing, is extremely high. That's industry consensus. You squeeze a gas zone or an oil zone, heavily fractured as this is, highly porous, the permeability is the greatest I've seen in any log in the Permian Basin, your chances of getting an adequate squeeze job on that are generally nil. It can happen.

Q. The perforations that were made in the McBride well, were they made all at the same time or did you go in at a process and perforate an area and

test or did you just perforate all of the zones?

A. All at the same time.

Q. And basically what you now know, that was probably a mistake?

A. I don't think that necessarily was a mistake. I think you have massive fracturing in there and you'll have that regardless. Now, there is a distinction between the McBride State, our well, and the Yates "3" Pathfinder. There is an extremely dense and permeable zone between the gas zone and the oil zone, approximately 10 feet thick. In our well, that zone does not exist. The permeability is constant throughout both oil and gas zones.

Whether, in fact that helps the Yates #3 in this case or not, I don't know. It could very well if, in fact, the Yates #3 ends up without a high gas/oil ratio.

MR. CARROLL: That's all the questions I have.

EXAMINER CATANACH: The witness may be excused.

(Thereupon, a recess was taken.)

EXAMINER CATANACH: The hearing will come to order.

MR. CARROLL: May I proceed?

EXAMINER CATANACH: Yes.

LESLIE BENTZ

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

EXAMINATION

BY MR. CARROLL:

Q. Would you please state your name, occupation, and by whom you're employed?

A. My name is Leslie Bentz. I'm employed as a petroleum geologist by Yates Petroleum Corporation of Artesia, New Mexico.

Q. Have you previously testified before the New Mexico Oil Conservation Division as a petroleum geologist and had your credentials accepted as same?

A. Yes, I have.

MR. CARROLL: I tender Ms. Bentz as an expert.

EXAMINER CATANACH: She is so qualified.

Q. Ms. Bentz, you have been present here in the hearing room during the testimony of the expert witnesses for Stevens Oil, have you not?

A. Yes, I have.

Q. The area with which we are concerned, are you familiar and have you done any studies in that area?

A. Yes, I have.

Q. Were you the principal geologist responsible for the drilling of the Yates Pathfinder 3 and 6 wells?

A. Yes, I have.

Q. Ms. Bentz, in an effort to try to shorten this long hearing and it's getting late in the day, I am going to ask you to state to the Commission basically if there are any differences with respect to your geological interpretation of this area, as opposed to that interpretation given to us by Mr. Ahlen on behalf of Stevens Oil.

Let's try to limit our discussion. I understand there are a lot of things where we agree, but let's look at where we disagree.

A. Okay. The two main points I disagree with are the oil/water transition zone and the overall size of the field. The oil water transition zone, as Mr. Ahlen has it, we performed a DST on the Pathfinder #6 below the transition zone, and we had a test that recovered only oil. We did not recover any water. So, therefore, I believe that we are dealing more with a tilted oil water contact rather than a transition zone.

Q. You have prepared five exhibits for use

here at today's hearing?

A. Yes, I have.

Q. The first exhibit was a land plat which agrees with what Stevens Oil did, your second and third exhibits were the large cross-section and then a smaller cross-section which really depicts the same thing, is that correct?

A. That's correct.

Q. And then Exhibits 4 and 5 deal more specifically with what you were just testifying to, about the transition zone and water zone and what have you, do they not?

A. Yes, they do.

Q. In particular, which exhibit would you be referring to basically?

A. If we were referring to the small cross-section, I think that--

Q. If you could, point out for the Examiner exactly how that relates?

A. Okay. If you'll note, there appears to be a definite oil/water contact in the Stevens Operating McBride. That oil/water contact is lower in the Pathfinder #3 and again, by the time you reach the #6, you're dealing with almost 50 feet lower than you are in the McBride well.

This only comes into play when you're trying to figure out your oil column so you can calculate how much oil is in place.

Q. Now you performed these functions and furnished this information to Mr. Boneau, did you not?

A. Yes, I did.

Q. The specific purpose for determining the oil/water contact was to aid him in determining the oil in place or what the reservoir contained?

A. That is right.

Q. Now, what other item did you differ with, with respect to the interpretations given by Mr. Ahlen?

A. I disagree with the size of the overall field. I probably have considerably more data than Mr. Ahlen to make this interpretation. Yates Petroleum has in their possession six seismic lines that really delineate what is going on in Section 21, and pretty much what's happening in the north part of 28. The only problem would be in the south part of 28.

Q. Are you familiar with the two lines of seismic that Mr. Ahlen testified to?

A. Yes, I am. I have them both.

Q. You do have four other lines of seismic

other than the two that Mr. Ahlen had?

A. That is correct.

Q. Are those lines located both north and south of the lines that you know Mr. Ahlen utilized?

A. They're located north.

Q. North of it. Exhibit 4 depicts, does it not, what you consider the parameters of this particular pool?

A. Yes, it does. One point I guess I have to disagree with Mr. Ahlen a little bit. The seismic, these fault cuts, have up to 200 feet of throw on them. They're very easy to pick. There's no question about where it is faulted, where we do have seismic control. We have dense enough seismic control in Section 21 that we know where the faults are.

The faults are wanting to come together in the north part of 21, and we're getting steep dip which suggests that the field does not extend significantly past the #6 well, as I've got shown on my map. To the south again we have the faults--we see the fault cuts, and again they are coming together. We see steep dip to the southeast and steep dip to the southwest, which suggests that it's not as flat and as large as Mr. Ahlen would suggest.

Q. Mr. Ahlen's Exhibits 3 and 4, those were

his attempt to depict the magnitude of this particular field, were they not?

A. Yes.

Q. In fact, you restrict the size of that pool, as he has shown in his Exhibits 3 and 4, in your exhibits, do you not?

A. Yes, I restrict it. Not only do I restrict it down on Stevens, but I have it restricted from what he has drawn on us. I wish it was the size he's drawn. Right now I don't have any data to indicate it's that big.

Q. Ms. Bentz, are there any other items you would like to draw to the attention of the Commission at this time?

A. I might tell just very briefly how these maps were constructed and how we calculated the reserves in place.

Q. All right.

A. We use seismic. I can map on top of the pre-Penn unconformity. Then I had to construct an isopach of the Mississippian which Mr. Ahlen really didn't show on his cross-section. But from doing synthetic seismograms, that is the reflection and the marker we are seeing.

Then I had to subtract that off, and then I

had pretty much used the constant gas/oil contact, which is consistent with what Mr. Ahlen said. Then I had to go from that point, use the tilt that we were seeing in the field, subtract off the gas contact and then come up with the oil pay below it.

Q. All right. Ms. Bentz, you did hear Mr. Ahlen testify concerning his construction of his Exhibits 3 and 4?

A. Yes.

Q. Do you feel, after having had the benefit of hearing him testify to that, do you still feel that your depictions of this particular pool are more reasonable than his, based on the fact that you had more information?

A. Because I had more information available to me.

MR. CARROLL: I pass the witness.

EXAMINATION

BY MR. CARR:

Q. Because you have more information, you have been more able to, in your opinion, clearly define the boundaries of the reservoir?

A. Yes, I have.

Q. And it is smaller than the reservoir as depicted in Mr. Ahlen's interpretation?

A. Yes.
Q. And you've utilized probably four additional seismic lines to make this interpretation?
A. That is correct.
Q. Based on your interpretation, there's still substantial reserves under the north half of 28, isn't that correct?
A. Yes, there are.
MR. CARR: That's all I have.
EXAMINER CATANACH: No questions.
MR. CARROLL: Mr. Examiner, I would tender Exhibits 1 through 5 at this time.
EXAMINER CATANACH: Exhibits 1 through 5 will be admitted in evidence.

DAVID FRANCIS BONEAU

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

EXAMINATION

BY MR. CARROLL:
Q. Would you please state your name, your occupation, and by whom you're employed?
A. My name is David Francis Boneau. I'm employed as an engineer by Yates Petroleum Corporation. I hope I'm still employed, if I ever get back there.

Q. Mr. Boneau, have you previously testified before the Oil Conservation Division as an expert in the field of petroleum engineering?

A. Yes, sir.

Q. And had your credentials accepted for the same?

A. Yes, sir.

MR. CARROLL: I would tender Mr. Boneau as an expert witness.

EXAMINER CATANACH: He is so qualified.

Q. Mr. Boneau, you have prepared for today's hearing two exhibits, have you not, Exhibits 6 and 7?

A. Yes, sir.

Q. Would you please explain to the Examiner what those two exhibits are?

A. Those two exhibits are oil and gas isopachs of this reservoir that we have been discussing. They are based--their outline is consistent with the outline developed by Ms. Bentz in her testimony.

There are three data points on which the oil in place and gas in place calculations are made. Those are the three wells that are productive from this reservoir.

I've analyzed the logs and come up with feet of gas hydrocarbon pore volume and oil

hydrocarbon pore volume in each of the three wells, put those on the outline, planimetered, drew contour lines, planimetered, and come up with original oil in place of 9.1 million stock tank barrels and original gas in place of 16.4 Bcf, and those numbers are going to be smaller than similar numbers developed for the larger reservoir presented by the other people.

Q. Through Mr. Davis' testimony?

A. Yes, sir.

Q. Mr. Boneau, you were present during the testimony of Mr. Davis, is that correct?

A. Yes, sir.

Q. Mr. Boneau, would you please discuss for the benefit of the Examiner if you found any or if you have any differences with the testimony or the conclusions drawn by Mr. Davis and why you draw those differing conclusions?

A. I'll try to do that. Let's start with what I think we have in common. I think we agree that there's a reservoir of some size that has roughly a hundred foot column of oil overlaying 500 plus or minus feet of gas, a big gas cap. An oil reservoir with a big gas cap. It seems to be fractured. We have some indication that it's fractured.

There's an awful lot of oil there, and we

simply want to spend some time trying to recover a large fraction of that oil. What I think is happening in Mr. Stevens's well is that he's coning oil up, he's perforated, you know, he's barely in the top of the oil zone or halfway in the oil zone, but he's not really perforated in the oil zone. He has all this gas cap open.

The only way he can produce oil is to cone it up where its perforations are. And to get a pressure drop to do that, he's got to pull the well hard to lower the pressure in the wellbore so that the oil can move up.

You know, I'm sorry his well's like that and I'm sorry our wells aren't perfect yet, either, but we've got this 9.1 million barrels of oil or a bigger number, I hope, with a big gas cap. At Empire Abo, which is a huge field, it has this same kind of geometry on a bigger scale, but the same kind of geometry. And by slow production over many years the partners at Empire Abo are going to recover something like 40 percent of the oil. That might be a big target, but, you know, 30 might be possible. It might be possible to recover 3,000,000 barrels of oil from this.

I would ask you to do a little arithmetic

with me. If you take--my numbers are easier for me to talk about, but if you take 16.2 Bcf of gas and produce it at a 20,000 GOR, you get out 820,000 barrels of oil, which is like eight percent of the oil in place. I'm thinking, that's what they're asking for. Maybe that's all we can do, but give us 90 days to try and do it right, what I call right, which is perforate in the oil, produce it at low rates so you don't cone water, so you don't cone gas, see if you can do that.

That's what we're suggesting, is that there be a period of time to see if the operators can do that. And if that's successful, we probably can develop the field so that we'll get an extra two or two and a half million barrels of oil, which is a lot of money to us and a lot of royalties and all that good stuff.

We drilled our discovery well a year or year and a half ago, and it sat there, you know, it produced nothing. Our people feel that another 90 days of an empty pocket is okay, in view of the possible plum of this 2- or 3,000,000 barrels of oil.

That's pretty much our position. We just don't believe that you can set a GOR and expect people not to go up to it. The GOR is going to be like a

highway speed limit, I think. The maximum is going to become the minimum, the minimum is going to become the maximum. You set 20,000, you're going to get gas wasted. You need to set a low GOR and a relatively low flow rate so that we can try to produce this reservoir as an oil reservoir. It's going to require Mr. Stevens to do some things he doesn't think will work or doesn't want to do, and it's going to require us to work on our wells to reach the same thing. Maybe we can't do it, but we want 90 days to try.

Q. Mr. Boneau, based on your calculation of reserves in place, the rates that Stevens Oil Operating is requesting, would those rates, based on your reserve numbers, result in a significant production of the amount of gas that's in place or a reduction in the pressure in the gas cap?

A. Yes. Well, if he's going to produce, if we're going to be able to produce 13,000,000 cubic feet per day out of his well and out of at least one of our wells, in nine months that's going to amount to something like 43 percent of the gas in the reservoir.

If he produces his at 20,000 GOR and we produce ours at 20,000 GOR for the nine months, that's over 7 Bcf of gas which is around 40 percent of the

gas in the reservoir. This test period would blow down the reservoir. The test period would be the life of the reservoir. I think that's not wise.

Q. Mr. Boneau, is it a fair statement, then, that you disagree with Mr. Davis' figure of five percent that he attributed to allowing their program to go on for nine months, that they would only result in an approximate five percent reduction, then?

A. Well, he admitted that was based on two and a half million a day and a different GOR than he was asking for. So, yeah, the numbers are--if people would produce what is allowed by what they're requesting, way more than five percent of the reservoir would be blown down.

Q. Mr. Boneau, I know you've gotten into part of what Yates is asking this Commission to do out there. Would you specifically state everything that Yates would like the Commission to do? because we are asking, in effect, or Yates Petroleum Corporation is asking for specific rules to be imposed out there on this field, are they not?

A. Yes, sir, that's correct. We're asking that the 320 acres remain as Mr. Stevens asked, and I think our reason for that is that my idea may be entirely wrong and in three months we'll be back here

saying, we got a little oil and most of us got gas and we're all beyond 320s. We think you would be wise down the road to stay with 320s just like they ask.

THE WITNESS: We'll give you one, okay?

MR. STEVENS: Thanks.

A. We think that the oil rate should be set at 222 barrels of oil per day, and that the GOR should be set at 2,000, and that the test period should last 90 days, three months, rather than a longer period of time.

Q. Specifically what tests are you proposing or is Yates proposing to perform out there, and can those tests be performed under the guidelines that you've just advocated?

A. Well, as Mr. Davis and I agree, I'm sure we could think up tests which would take longer than that. I don't think that's the point. The main thing we want to test is whether we can produce oil at relatively low GOR and relatively low water/oil ratios with the idea that if we're successful in developing on 80 acres or maybe 40 acres, or maybe drilling horizontal wells through the oil, but the main test we want to do is try to complete the wells so that they can produce as oil wells, okay?

We would also do some testing,

interference-type pressure testing, try to seek continuity from well to well and also from gas cap to oil zone. I have in mind, if some of this works out, in doing a numerical simulation reservoir model. That is not do-able in three months, but three months is long enough to determine an answer to the main question that we think is an important one to ask, whether these can be produced as oil wells.

Q. Mr. Boneau, in your opinion, if the Commission were to accept the guidelines as guidelines what you have just advocated, is it your opinion that such would prevent waste in this area?

A. Yes, they would surely prevent waste.

Q. Do you feel that correlative rights would also be protected?

A. Yes, correlative rights would be protected. Both people would be producing at relatively low rates.

Q. Mr. Boneau, if the Commission were to adopt the guidelines that have been promoted by Mr. Stevens or Stevens Oil, do you feel that those guidelines would prevent waste?

A. I feel if the Commission grants what the petitioner asks, that a large portion of the gas cap will be blown down, whether it's 18 percent or 25

percent or 43 percent. An unacceptably large portion of the gas cap will be blown down and the result will be a waste of oil that is possibly recoverable.

Q. In other words, we would leave oil in the ground that might have been recovered, had we not wasted the gas cap?

A. Yes, sir.

Q. Do you feel that Stevens Oil proposal, would that protect correlative rights?

A. It probably would, actually. Both people would produce like crazy, out of competition.

Q. But the key problem then here is the issue of waste, is it not, Mr. Boneau?

A. It is in my opinion, yes, sir.

Q. Basically, then, under both proposals, correlative rights would be taken care of because all parties would be treated the same?

A. Yes, sir.

Q. The real issue is the possible damage to the reservoir?

A. That's my opinion, yes, sir.

Q. Do you have anything else that you would like to present to the Commission today relative to these issues?

A. I do not.

MR. CARROLL: Pass the witness.

EXAMINATION

BY MR. CARR:

Q. Dr. Boneau, if I understand your concern, you believe waste will occur if the recommended gas rates, recommended by Stevens, are authorized and they produce those volumes, is that right? You're going to have a reduction in pressure in the gas cap?

A. Yes, sir.

Q. And that's going to lead to waste?

A. Uh-huh.

Q. Would that occur if you had oil saturated rock in the gas column in this reservoir?

A. I believe that my concern is independent of that issue. I did not address that issue and I don't think that it's--

Q. When you look at this, does the reservoir drive mechanism have anything to do with your concern about blowing down the gas cap?

A. Oh, yes.

Q. If it's a hundred percent water drive reservoir, would that cause waste?

A. If there's a huge water drive, what you call a hundred percent water drive, if there's a huge water drive, you would want to keep the pressure in

the gas cap so that the oil did not move up into the gas cap unless the gas cap is already saturated with oil. Our geologist doesn't think that it's already saturated with oil, and we don't think it is and we don't think it's worth that risk.

So, even if there is a water drive, you would want to keep the pressure in the gas cap so that the oil would be forced to your wells rather than up into your gas cap. If there's not a big water drive, then the dominant mechanism is the gas cap expansion, and you would want to maintain the energy in that gas cap to push oil out your wells rather than to blow the gas off of the gas cap.

Q. We don't know, do we, whether we have a 50-percent water drive or more than that?

A. No, we do not know.

Q. We really don't know for sure whether or not we've got oil saturated rock in the gas column, do we?

A. I don't know with 100-percent certainty the answer to that. I know there's a gas cap. That's the one drive I do know, and I'm worried about protecting that one.

Q. The reason that you're proposing the 90-day temporary period with the rates of withdrawal and the

gas/oil ratio that you're recommending, that is again to gather data on this formation, isn't that right?

A. Yes, sir. You could be absolutely right on several of--

Q. One thing we can probably agree on, there is a lot out here we don't know about this reservoir yet?

A. Yes, sir, I agree.

Q. We also know there's a substantial volume of oil under Stevens' tract? I think that's a fair statement, is it not?

A. Yes, sir.

Q. What you are recommending is a test period that will reduce producing rates for 90 days?

A. Well, I'd prefer to look at them that it would raise them from zero to something, but not as high as other people want.

Q. You're going to have a lower gas/oil ratio than is recommended by Stevens?

A. Yes, sir.

Q. You're recommending a lower producing rate?

A. Yes, sir.

Q. Based on your understanding of this reservoir and the wells in it, at the rates you're recommending, it's fair to say that no oil is going to

be produced from the Stevens well, isn't that right?

A. Well, the gist of your question is right if he does nothing. I think--and he doesn't give a darn, you know, what I think--but I think that he needs to be out there trying to perforate his well lower and trying to squeeze his well and trying to produce the oil and--which is the same thing that we, you know, think we want to do. And you're right, I think, in that our recommendation forces him to make a decision to produce nothing or to try to produce the oil.

Q. And as the well is now completed, your recommendation simply means that this well won't produce oil unless there's some real changes made in the mechanical set-up in that well?

A. I believe that's true, yes.

Q. And you would have to agree that when you start monkeying with a well and start going in and cementing off perforations and all, there's a basic risk to the well itself whenever you do that, isn't that correct?

A. There is some risk in that operation, yes, sir.

Q. When you go down and try and perforate deeper in a zone, you do run the risk of a higher water cut, isn't that correct?

A. That's correct.
Q. And you could get into an area of less porosity? That's correct, isn't it?
A. Not that that's bad, but that is correct, yes.
Q. So what you're recommending, in fact, poses some risk to the Stevens well, if he decides to go out there and do something mechanically to the well, isn't that right?
A. That's correct. And we've got two wells that have to face the same risk. Our wells are not in the condition where they need to be to get this high recovery of oil.
Q. You talked about testing to see if there was continuity well to well during this period of time. Right now, isn't it fair to say it's fairly obvious that there is communication between all three wells in this pool?
A. Yes, that's everyone's opinion I've talked to, and that's my opinion also.
Q. The two Yates wells are currently producing oil at lower rates?
A. I purposely did not talk about what our wells are doing. They've done different things on different days. Our wells cannot produce 222 barrels

of oil a day at 2,000 GOR right now.

Q. Are they producing oil right now?

A. They have been tested in the same time period that Mr. Stevens talked about, in the previous few days, and they both produced oil in those tests.

MR. CARR: That's all I have.

EXAMINER CATANACH: Any redirect?

MR. CARROLL: No.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Boneau, the outline of the reservoir as your geologist has defined it, covers approximately 355 acres. You and Stevens are in agreement that this field should be spaced on 320 initially. Do you have any feel for what these wells might eventually be determined to drain, how large an area?

A. My feeling is that the gas cap, if they end up being produced as gas wells with minor amounts of oil, they can clearly drain--320 acres is clearly appropriate spacing. If the tests that I'm talking about turn out to be successful, the field should be developed as an oil reservoir on either 40's or 80's. We have a little permeability data, which is consistent with what I'm saying. In this 90 days we would have more pressure build-ups and permeability

determinations and could tell you whether a 40 or an 80 is a recommended spacing. But I'm confident that if it can be developed as an oil reservoir, 40's or 80's are the appropriate spacing.

Q. Whether or not it will be produced as an oil or gas reservoir depends on this test period, doesn't it, and what is determined?

A. That's my point of view, yes, sir. That's what we're trying to convince you of.

EXAMINER CATANACH: I have no further questions of this witness.

MR. CARROLL: Mr. Examiner, I would move the admission of Yates Exhibits 6 and 7.

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

MR. CARROLL: That concludes Yates' evidence.

EXAMINER CATANACH: Would counsel like to make closing statements in this case? Okay, Mr. Carroll, whenever you're ready, if you want to make a closing statement.

MR. CARROLL: I think that the problem that faces the Commission here is not one of whether to do something or not to do something. I think both parties agree that something needs to be done. We

have a problem. We thought we had a gas field, a gas prospect, and now those thoughts have been shaken. It now appears that we have or quite possibly we could have a very nice oil discovery out here.

Really, I think when you look at the evidence and you weigh the evidence presented by the two sides, I think what Yates has presented probably should be given a little more weight because it's based upon more information. Yates has drilled two wells. They have more lines of seismic out here. They've been better able to define what the reservoirs are.

It gets us down to the ultimate question, which is that we have a resource, a natural resource, and we want to protect it. And our guidelines are, we are supposed to prevent waste. Well, we both presented testimony which says, "Our proposal will prevent waste." I think you need to break it down and look at it a little more closely, because I don't think both sides are talking about preventing waste.

I do believe that Yates' arguments and the evidence put on by its two witnesses are depicting a situation that we could, if we do something wrong out here, we could risk the loss of recoverable oil; therefore, waste. Our risk out there is real, in

losing oil.

Mr. Stevens, and Stevens Oil's position is well, we're going to lose because we're not going to be able to produce. Under the proposal presented by Yates, I don't think you're going to lose that oil. If worse comes to worse and Stevens Oil does not do anything to its well and it just sits out there for three months, they may be deferred income, but I don't think there's anything in what has been proposed by Yates that is going to cause them to lose ultimate reserves. And that's the risk we really need to focus on here, is what is the real risk?

The risk is losing reserves, not deferring production or not getting cash flow for a period of time. It is unfortunate that Mr. Stevens adopted a procedure by going out and perforating the entire string, or what he thought was the entire string, where Yates has not done that. And they might be better able. Still, he's not prevented from taking remedial action and putting his well into a situation where it can produce as an oil well.

There is no easy solution. It's going to cost somebody. What we've got to do is weigh the relative cost. If Mr. Stevens is wrong, if his proposal is wrong, we may have shot ourselves in the

foot and lost 50 percent of those oil reserves.

If Yates is wrong, we have deferred income for Mr. Stevens for three months. That's what you've got to weigh. I think that's what the decision ought to turn on. Which solution is the least risky?

We do agree we don't have the answers and we need to get some more, but let's don't adopt a policy which could really cost us in the long run and other folks out there. There's other people that--well, I say "other people." Yates controls most of this and I think possibly Stevens Oil, at least the way these pools have gone, but we also have the State of New Mexico, the royalty owners and other working interest owners, if there are any. That's where we need to confine ourselves, and that's the crux of the question.

EXAMINER CATANACH: Thank you. Mr. Carr?

MR. CARR: May it please the Examiner, I think the real question here is efficient operations in this reservoir. I think we agree that what we don't have is sufficient data to make the kind of calls that have to be made so that the operators in the pool can go forward, produce the wells at the maximum efficient rate and recover what is there.

What we have, we have Mr. Stevens coming in

here with a well that we submit to you has been completed and in an appropriate fashion, and we have also Yates wells which have been completed in what appears to be appropriate manners. Yet, when we look at the reservoir, we find that they're not producing actually as any of the operators originally hoped.

So what we're doing, we're coming in and we're asking for some maximum limits that admittedly were set too high. They were set too high because we were hoping not to interfere with Yates operations while we collected data. But we're coming in here with a realistic time period to collect some meaningful data so some real decisions can be made and some producing rates that permit flexibility so that we can acquire data to make some realistic calls.

I submit to you, on the other hand what we have is Yates coming in with some very low rates and a very short time period that we submit will really be inadequate to establish anything, and we'll be back here in another 90 days looking at this same question all over again.

There are a few things that we do know. We do know that the reservoir isn't performing like anybody suspected, and even when we hear arguments from Yates today, no one is willing to call this, once

and for all, as an oil and gas reservoir now. So we've got a situation where we come before you and the question is: Are we going to go after some meaningful information and try and do this right? or are we going to just take a short stab and collect a little bit of data which, I think, even Dr. Boneau suggested the time frame was inadequate, for modeling the reservoir and some other things that might ultimately be required.

There are other things we agree on. There's a lot we don't know. We sit here and we speculate, what if? What if you've got 100-percent water drive? What if it's 50-percent water drive? What if there's oil saturated rock in the gas zone? What if? What if? What if the gas/oil contact is tilted? The fact of the matter is, we really don't know very much and we submit to you we're standing before you with the only proposal that's going to enable us to really obtain some information.

But there is a correlative rights question that also hangs over this, and that is the proposal that Mr. Stevens makes is going to let everybody produce. I don't think anybody would suggest that these two operators are going to run out and try and gut a reservoir that they've got this kind of

investment and interest in.

What you've got is a situation where we're proposing something where Yates can produce, and they're proposing something that gives us the option of undertaking certain--attempting certain mechanical changes on our well that could ruin the wellbore. I think it would be nice for us to go down and perforate where we're going to be coning water into the well or the perforations, or the porosity is going to be tight.

Mr. Stevens is a prudent operator and he thinks these things are imprudent, so what we have before you is one proposal where everyone can produce, and another one where Yates will produce and we'll be confronted with making a decision of sitting back and not producing anything, or running the risk of ruining our well.

We believe we've come forward with a proposal that was conceived in a fashion that we thought would be acceptable to everyone, and at the same time let us develop some meaningful information. We feel like the hearing has been turned and Mr. Stevens has been painted as someone trying to run out and blow off the gas cap. We think it's absurd.

We think the only appropriate thing for you

to do is to grant the application. But, if you have to make some adjustments in it, obviously on this record we were asking for some things that were unusually high to accommodate others; we certainly would not object to--I hate to say it--abandoning the one thing in which we seem to be in accord.

I think perhaps if you're going to try and set up a framework with which some meaningful information can be gained, 160-acre spacing is probably the most appropriate way to go, for it would permit not only testing but additional drilling within what appears to be the boundary of the reservoir. We submit that if you're going to protect correlative rights, if you're going to prevent waste, the application of Stevens should be granted.

EXAMINER CATANACH: Thank you, Mr. Carr. It's requested that I receive draft orders from both parties in this case.

Is there anything further in this case at this time? If not, Case 9854 will be taken under advisement.

CERTIFICATE OF REPORTER

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

I, Carla Diane Rodriguez, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; 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 February 25, 1990.

Carla Diane Rodriguez
CARLA DIANE RODRIGUEZ
CSR No. 91

My commission expires: May 25, 1991

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9854, heard by me on February 7 1990.

David R. Catanach, Examiner
Oil Conservation Division

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

EXAMINER HEARING

IN THE MATTER OF:

Application of Stevens Operating Corporation for pool creation and special pool rules, Chaves County, New Mexico. Case 9854

ORIGINAL

TRANSCRIPT OF PROCEEDINGS

BEFORE: MICHAEL E. STOGNER, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

January 24, 1990

CUMBRE COURT REPORTING
(505) 984-2244

EXAMINER: Call next case No. 9854.

MR. STOVALL: Application of Stevens Operating Corporation for pool creation and special pool rules, Chaves County, New Mexico.

Applicant requests this case be continued to February 7, 1990.

EXAMINER: Case No. 9854 will be so continued.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9854, heard by me on 24 January 1990.

Examiner

Oil Conservation Division

CERTIFICATE OF REPORTER

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

I, Diana Abeyta, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; 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 31, 1990.

DIANA ABEYTA
CSR No. 267

My commission expires: May 7, 1993