STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

8 January 1986

COMMISSION HEARING

IN THE MATTER OF:

Application of Yates Petroleum Corporation for an exception to the Special Rules and Regulations for the Bluitt-San Andres Associated Pool as promulgated by Division Order R-5353, as amended, Roosevelt County, New Mexico. CASE 8614

BEFORE: Richard L. Stamets, Chairman
Ed Kelley, Commissioner

TRANSCRIPT OF HEARING

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MR. STAMETS: The hearing will please come to order.

We'll call next Case 8614.

MR. TAYLOR: The application of Yates Petroleum Corporation for an exception to the special rules and regulations for the Bluitt-San Andres Associated Pool as promulgated by Division Order R-5353, as amended, Roosevelt County, New Mexico.

MR. STAMETS: Call for appearances in this case.

MR. LOSEE: Mr. Chairman, A. J. Losee, Losee and Carson, Artesia, New Mexico, appearing on behalf of Yates Petroleum Corporation.

MR. CARR: May it please the Commission, my name is William F. Carr with the law firm Campbell and Black, P. A., of Santa Fe.

We represent Union Oil Company of California in this matter and I have two witnesses.

MR. STAMETS: Mr. Losee, how many witnesses do you have?

MR. LOSEE: I have one witness today.

MR. STAMETS: I'd like to have all the witnesses stand and be sworn at this time, please.

(Witnesses sworn.)

DAVID BONEAU,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. LOSEE:

Q State your name, please.

A David Boneau.

Q Where do you live?

A I live in Artesia, New Mexico.

Q You're employed by whom?

A I'm employed by Yates Petroleum Corporation.

Q In what capacity?

A I work at Yates as Engineering Manager.

Q Have you previously testified before this Commission and had your qualifications as an engineer accepted?

A Yes, sir.

MR. LOSEE: Are Mr. Boneau's qualifications acceptable?

MR. STAMETS: He is considered qualified.

Q Would you explain to the Commission what Yates Petroleum Corporation is seeking in this case?

A In Case 8614 Yates Petroleum is asking the Commission to authorize both the unorthodox location and a nonstandard spacing unit for a well called Bluestem "ZL" Federal No. 1. This well is located in the Bluitt San Andres Associated Pool. The exact location is 1650 from the nroth and 2310 from the east of Section 20, 8 South, 38 East.

The proposed 160-acre spacing unit consists of the south half of the northeast quarter and the north half of the southeast quarter of the Section 20.

This case was heard at an Examiner Hearing in June; I believe it was June 19th, 1985. Order R-8025 was issued on September 18th, 1985. This order authorized the unorthodox location and approved the 160-acre spacing unit but it set an allowable factor of approximately 34-1/2 percent for the Bluestem Well.

Yates believes the allowable factor should be 85 percent.

Q Would you show us where the Bluestem Well is located as related to other wells in the Bluitt San Andres Associated Pool?

A Yes. That's shown on Exhibit One, which is a map of the area of the Bluitt San Andres Field.

On that map, Jerry, the -- all the wells in the Bluitt San Andres Field are shown. The green wells are producing oil wells. The red wells are producing gas wells, and the Bluestem is a gas well. The blue colored triangles are nonproducing wells, shut-in or plugged and abandoned.

The Yates' acreage is indicated in the orange. It think it will become relevant, Union's acreage is colored in the yellow. The Bluestem Well itself is indicated by the one-inch long red arrow pointing to the red square.

The Bluestem Well is located 1650 from the north and 2310 from the east of Section 20 towards the right side of the map. This puts it 330 feet from the north and west lines of the Yates lease.

Union operates a well called Federal 20 No. 1 in Unit B of Section 20, which is just to the north of the Bluestem Well.

Other things to notice include two gas wells operated by Tenneco in Units C and D, which are also red squares. Also we should notice that there are other gas wells, I believe there's a total of eight or nine, indicated by the red squares, that produce in the Bluitt San Andres Field. Each of these, with one exception, is located 660 feet out of the corner of the lease. The exception is the

Tom Ingram well in Section 24, Unit C of Section 24. As far as I know, none of these other wells have a limitation on production.

I think that covers sort of a picture of what we're talking about on the Bluestem.

Q Let me ask one other question, Mr. Boneau.

The special -- are there special pool rules for the San Andres Associated Pool?

A Yes, sir.

Q And the spacing for those, under those special pool rules for gas wells on 320 acres is 990 feet out of the corner, is that correct?

A Yes, sir.

Q That would be the closest orthodox location to a corner.

A Yes, sir, that's correct.

Q So that the Bluestem Well is unorthodox, that is, 330 feet out of the corner.

A Yes, sir, and the further point I was making was other gas wells are 660 out of the corner.

Q All right. Would you outline the history of the Bluestem Well for the Commission?

A On Exhibit Two I've listed just a chronology of some of the events in the life of this well.

The well was -- well, let's start over here, guys.

The lease that the well is located on was scheduled to expire on June 1, 1984. The well was spudded on May 21st, 1984, a fairly small number of days before the expiration of the lease.

Yates from the beginning thought it was drilling an oil well at location and rules governed by the general rules for southeast New Mexico, so it was drilled at a 330/330 out of the corner.

The actual chronology is that on May 1st, 1984, Yates filed a permit to BLM for 40-acre spacing.

On May 7, 1984, this permit was approved by the BLM. The well was spudded on May 21st.

The well was ready to produce by June of 1984, June 29th of 1984. On August 28th, 1984, a gas connection was made to the Warren Petroleum pipeline and on August 29th, 1984, the well was completed flowing 660 MCF a day from San Andres perforations.

The well was drilled as an oil well. It turned out to be a gas well, mostly because it produces from an Upper San Andres zone which we designate as a P-1 zone, rather than the P-2 zone, which produces in the Union well and in a large number of oil wells in the field.

Further chronology, then, is that Yates

realized that they had drilled it nonstandard and on an unorthodox location, and on September 19th, 1984, a hearing was scheduled before the Examiner of the NMOCD, and that hearing was postponed and rescheduled and eventually did happen later in 1985.

And Item 8 on the exhibit is that in preparation for the hearing in June of 1985, a flow test was performed May 28th to June 2nd, where the well was tested into production equipment and the downhole pressure and build-up test was measured over about a 70-hour period of time.

The Examiner hearing then was held on June 19th, 1985. Order R-8025 was entered on September 18th, 1985, and on October, 1985, the well began producing and is producing now.

Q Have you run a 4-point test -- has Yates run a 4-point test on the well?

A Yes, sir. Shortly after Order R-8025 was entered in September, Yates filed a 4-point test on Form C-122, showing a calculated absolute open flow of 927 MCF per day.

Q Is the well on production now?

A Yes, sir.

Q What is it producing?

A It is currently producing about 200 MCF

per day.

Q Now it's producing out of -- gas out of the P-1 zone. Did you test the P-2 zone?

A Yes, sir.

Q What were the results?

A A little water and a little oil; noncommercial production from the P-2 zone.

Q Did it appear to have been drained?

A I don't know, sir.

Q Is that the oil zone, the P-2 zone?

A Yes, sir.

Q What zone is the Union 120 Well to the north producing in?

A It's producing from what we call the P-2 zone. I think Union has a different name for it but it's -- it's the oil zone.

Q Okay.

A The Lower San Andres, Middle San Andres.

Q Do you know how much approximately the cumulative production is from that well?

A I believe it's somewhere between 100 and 110,000 barrels of oil.

Q Now, on your Exhibit One you show a non-producing well in the same 40-acre tract.

A Yes, sir.

Q Is that the Delaware Apache Koch Well?

A That's correct, yes, sir.

Q Could you tell us approximately when it was drilled and what production it had?

A It produced 185 barrels of oil, that number I remember exactly.

It was drilled in the early seventies, as far as my memory serves me, but I really do not remember that date exactly.

Q Was the oil production out of the P-2 zone?

A It was -- it was completed and tested and produced from the P-2 zone, yes, sir.

Q Did the well test the P-1 zone?

A No, sir.

Q When Yates started to drill this Bluestem Well, proposed as an oil well, what was the purpose of locating it to the northwest of the Delaware Apache Well?

A The purpose was to move up dip away from the noncommercial well towards commercial production.

MR. STAMETS: Mr. Losee, let's go off the record.

(Thereupon a discussion was had off the record.)

MR. STAMETS: Back on the record, Sally.

Q Mr. Boneau, can you tell us about the drainage area of the Bluestem Well?

A Yes, sir. That brings us to Exhibits Three and Exhibit Four.

Exhibit Three is a plot of the daily production from the Bluestem Well from October through late December. Current production is about 210, 200 MCF per day and is declining at about 7 percent per month, is the way I project it, as shown on that exhibit.

Exhibit Four is a production forecast of the future for the Bluestem No. 1, based on this three months of production. I estimate that the ultimate recovery from the well will be 167-million cubic feet. In the upper righthand corner is a volumetric calculation showing that this gas, 167-million cubic feet, occupies about 50 acres of reservoir and I therefore believe that the drainage area is approximately 50 acres.

Q Do you think that the Bluestem Well should be penalized because of its unorthodox location?

A The well was drilled in the wrong place by Yates and the rules provide for a penalty to offset the advantage that Yates obtained.

The Bluestem will drain a little more of

the offset leases than would be drained by a well at an orthodox location. I made a Figure Five and a Figure Six, I guess you'd call it Exhibit Five and Exhibit Six, which shows how I arrived at the 85 percent number quoted earlier.

Exhibit Five shows 160-acre circle around the nearest orthodox location and it shows a 50-acre circle around the actual location of the Bluestem "ZL" No. 1.

There are approximately 7 acres that will be drained which lie outside the 160-acre circle surrounding the orthodox location, so that approximately 7 of the 50 acres of drainage area will come from outside what would be drained by a well at an orthodox location. 7 out of 50 is about 15 percent penalty.

Exhibit Six puts these numbers down on paper maybe in a more organized fashion. It also shows that of the 50 acres drainage by the Bluestem Well, 55 percent of it will come from lands which lie on the Bluestem Lease.

So 55 percent of the drainage is from the lease; 85 percent of the drainage is from a circle the size of the spacing unit surrounding an orthodox location. That's where I get the 15 percent penalty and the 85 percent allowable factor of deliverability.

Q Mr. Boneau, were Exhibits One through Six prepared by you or under your direction?

A Yes, sir.

MR. LOSEE: Move the introduction of Exhibits One through Six.

MR. STAMETS: These exhibits will be admitted.

Are there questions of Mr. Boneau?

MR. CARR: Yes, Mr. Stamets.

CROSS EXAMINATION

BY MR. CARR:

Q Dr. Boneau, I believe you stated the well at the present time, the Bluestem Well, was producing in the neighborhood of 200 MCF gas per day.

A Yes, sir.

Q That producing rate is the rate the well is authorized to produce with the existing penalty imposed on it. Is that correct?

A I'm not sure I understand you exactly, but that rate is, as I understand it, the allowable rate is the 30-some percent of the calculated absolute open flow and that number is about 300 to 320 MCF per day. It is currently producing around 200. It is producing less than that number as I calculate that number.

Q Why is that? Why is that? Why is it producing less than you're allowed to produce at this time?

A The well is not strong enough, capable of producing more than what it is producing.

Q So 200 is what the well can produce.

A That's what I believe, yes, sir.

Q So -- and this is less than the present penalty.

A That's correct.

Q So a penalty at the present rate isn't affecting the well's producing rate, is it?

A That's correct.

Q Now, when you originally drilled this well you were projecting it to be an oil well.

A Yes, sir.

Q It was not at a standard location for an oil well, was it, Mr. -- Dr. Boneau?

A Not for the Bluitt San Andres Associated Pool, that's correct. Yes, sir.

Q Was that oil well location ever approved?

A Yes. Well, we filed a permit to drill on May 1st, stating a 330 location and a 40-acre spacing unit, and that permit to drill was approved.

Q And you testified that other gas wells in the area are 660 feet out of the corner of their lease.

A Yes, sir.

Q 660 feet back from the acreage dedicated

to them.

A Yes, sir.

Q Those wells were, at least these -- let's look at the two Tenneco wells in the northwest quarter of Section 20, those two wells were originally drilled as oil wells, were they not?

A Yes, sir.

Q And they were drilled at standard locations for oil wells.

A Yes, sir.

Q And that's why they're 660, they were standard originally for an oil well.

A Uh-huh, yes.

Q And they've turned to gas. Now, --

A Or they were recompleted as gas wells.

Q Now, in locating the Bluestem Well you were moving up structure from the old well on that spacing unit, is that correct?

A That's correct. We got two feet up structure.

Q Now, in moving up structure you were moving toward other wells producing in the area.

A That's correct, sir.

Q Are there any wells -- what other wells are producing from a lower structural position than the

Yates well which is the subject of today's hearing?

A The only well I know of for sure is producing from lower is the other Yates well in Section 21, which is also a gas well produced and completed in this -- which is also a gas well completed in this Upper San Andres P-1 zone.

Q And how does it compare structurally to the Bluestem Well? How much lower is it than the Bluestem?

A I believe it's 10 to 20 feet lower.

Q Is there any production south, I'm not talking about lower structurally, but I'm talking about south, to the south of the Yates Bluestem Well?

A No, sir.

Q And so you're moving to the north; you're moving toward production and away from acreage that does not produce.

A We tried to move toward oil production. We seem to have gotten into a kind of a separate little oil reservoir -- gas reservoir, a separate little gas reservoir that may continue south. It actually looks fairly good on the log of the Delaware Apache Koch Well that is to the south.

Q In making your study of this area were you able to determine whether or not there is any communication or drainage taking place between the Yates Bluestem

Well and the Union well immediately north of there on the offset 40?

A The Union well is completed in the lower oil zone. Our well produces from the upper zone but is actually perforated in both zones and we have not set a packer or anything to isolate those zones.

It does appear from looking at the production from the Union well that gas production from the Union well increased at the time our well was opened in that gas zone, so it appears that some gas is going into the wellbore from the P-1 zone in our well down to the P-2 perforations, and through that old oil zone over to the Union well.

The production from that Union well is, oh, 10 percent or so of the gas production from our well.

Q Is it fair to say that there is good communication in the P-2 zone between the two wells?

A There definitely is communication, relatively good, yes, sir.

Q And in the P-1 zone, how would you -- do you have any evidence of communication between the two wells?

A No, sir, the only thing, well, the only thing I really know about the P-1 zone is from that pressure build-up test and the permeability is -- calculates about

one millidarcy, which is not really indicative of what I would call good communication or good permeability.

Q Now if I looked at your Exhibit Number Five, you have a radius of drainage around the -- a well spotted at the nearest orthodox location.

A Yes, sir.

Q And for the purpose of this exhibit you have placed a 160-acre circle around that well.

A Yes, sir.

Q And what is the reason for a 160-acre circle?

A The 160-acre circle has the area of the Bluestem lease.

Q So the only reason for the 160-acre circle is that what you're dedicating to the well.

A Yes, sir.

Q Have you done anything to justify that circle from a drainage point of view?

A The drainage is less than the 160-acre circle. It is the 50-acre circle.

Q If you put a 50-acre circle around that nearest location, the area that is shaded in blue on this map would be substantially increased, would it not?

A A 50-acre circle around the little square with the dot in the middle would lie entirely within the

Bluestem Lease and --

Q And all the acreage, then, outside the Bluestem Lease, if we use the same color coding that you've used here, would be shaded blue.

A Would be shaded blue; 45 percent of the acreage would be shaded blue; of the acreage within the 50-acre circle would be shaded blue; and 55 percent would be on the Bluestem lease, and that was why there are two sets of numbers on Figure 6.

Q So in essence, what we're doing is we are using an arbitrary larger area of drainage where it tends to reduce the penalty --

A Well --

Q -- and a smaller radius of drainage -- I mean a larger one where it will, yeah, reduce the penalty and a smaller one where it will --

A Well, I thought I was being -- I thought I was actually being nice and if you talk about the drainage area of an orthodox location and an orthodox spacing unit you're talking about a 320-acre circle and I thought that the 160-acre circle was a retreat to reality from that.

Q What do the pool rules provide for in terms of spacing, acreage dedicated to a well?

A For a gas well, 320 acres.

Q You're not here today attempting to

change the spacing requirements.

A No, sir.

Q In your study of this area did you encounter any evidence of any kind of permeability barrier that would affect the drainage pattern of any of these wells?

A I have no data that would indicate either way on that question.

Q Now you are 330 feet from the lease line.

A Yes, sir.

Q Both to the north and to the west.

A Yes, sir.

Q That is 66 percent closer lthan is permitted by the existing rule.

A Yes, sir.

MR. CARR: I have no further questions.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Boneau, if -- if the penalty that's assigned now is -- allows for greater rates of production than the well is capable of, why are you here today?

A We think that the formula that led to Order R-8025 is basically wrong and arbitrary, unfair, capri-

cious, all those words, and we didn't want to give the impression we were accepting it by not showing up; that we were endorsing it by not showing up.

We think the formula just needs to be challenged and our purpose is to examine that formula.

Q It's for the good of the industry and (not clearly understood).

A I've sure got a lot of other things to do than be here, yes, sir.

MR. STAMETS: Any other questions of this witness?

He may be excused.

MR. LOSEE: I reserve, Mr. Commissioner, the right to recall him.

MR. STAMETS: Mr. Losee, have you introduced Exhibits One through Six? Did you admit those for the record?

MR. LOSEE: I believe so, yes.

MR. CARR: At this time I'd call Mr. McKeel.

BURL KEITH McKEEL,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Would you state your full name and place of residence?

A Burl Keith McKeel, Midland, Texas.

Q Mr. McKeel, by whom are you employed?

A Union Oil Company of California?

Q In what capacity?

A I'm an Area Geologist.

Q Would you review your educational background and briefly summarize your work experience for the Commission?

A I received a BS in geology in 1966 from Oklahoma State University.

The last nineteen years I worked as a geologist for Lone Star Producing, the U. S. Atomic Energy Commission, and the past nine years for Union Oil Company of California. The last four and a half have been in West Texas and southeastern New Mexico.

Q Does your area of responsibility include the acreage which is involved in today's hearing?

A Yes, it does.

Q Are you familiar with the application

filed in this case on behalf of Yates Petroleum?

A Yes, I am.

MR. CARR: We tender Mr. McKeel as an expert witness in petroleum geology.

MR. STAMETS: The witness is considered qualified.

Q Mr. McKeel, would you briefly state what Union is seeking appearing in this case today?

A We are seeking the imposition of a penalty on the Yates Bluestem "XL" No. 1 Well to protect our correlative rights.

Q Have you prepared certain exhibits for introduction in this case?

A Yes, I have.

Q Would you please refer to what has been marked for identification as Union of California Exhibit Number One, identify it, and review it, please?

A Exhibit Number One is a structure map contoured on top of the Todd (sic) pay zone. The Todd has been referred to as the P-2 zone.

Q On the structure map have you indicated the producing interval with the depth of the each of the wells producing in this area?

A Yes, I have. The numbers by each well are the subsea depth on top of the Todd pay, or the P-2.

You'll notice on the structure map that north of the subject well dips are low and as we get to the subject well, south thereof that the dips increase substantially.

Q Now I asked Dr. Boneau about wells producing in this area structurally below the Yates Bluestem. He indicated one Yates well.

Are you aware of any other wells that are located structurally lower than the Yates well producing in this area?

A The only two wells that are lower structurally are the Federal Koch No. 2 just south of the subject well, which is a sub-economic well. The other one is the one the Doctor referred to in Section 21, the 1-ZR, and it also is producing much less than the 1-ZL has.

Q What is the primary producing horizon in this area?

A It's the San Andres formation, which makes up the P-1 and the P-2 formations, or P-2 zones, the P-2 zone being the oil producing horizon.

Q Does Union basically concur with the P-1 and P-2 designations used in this case by Yates?

A Yes, we do.

Q Would you now refer to what has been marked as Union of California Exhibit Number Two, your

north/south cross section, and review this for the Commission, please?

A Exhibit Number Two is a structural cross section from south to north. On the south end we have the Koch Federal No. 2 Well, going through the subject well, the Bluestem "ZL" to Union's 20 No. 1 Well, and northward to the 17-A Well.

Q Mr. McKeel, is there a trace for this cross section on Exhibit Number One?

A Yes, the red line on this is the contoured horizon on the structure map.

Q What does Exhibit Number Two show?

A We can see from the cross section that the porosity shown in red is very continuous throughout the area. We also can note that south of the Bluestem "ZL" that the dip increases substantially.

Q Mr. McKeel, in your opinion how important is structure in determining whether or not you make a successful well in this area?

A This pool is considered to be both a structural and stratigraphic field.

To the north production is limited due to porosity and permeability pinchout, while to the south production is limited by its structural position.

Q What general conclusions can you draw

about this area from your study?

A Our conclusions from this study are that the porosity in the P-1 and P-2 zones are very continuous and that due to the poor structural position wells south of the subject well will generally be sub-economic and that drainage, therefore, will be generally from the north.

Q Does Union plan to call an engineering witness to provide additional testimony?

A Yes, we do.

Q Were Exhibits One and Two prepared by you?

A Yes, sir.

MR. CARR: At this time, Mr. Stamets, we would offer into evidence Union Exhibits Numbers One and Two.

MR. STAMETS: These exhibits will be admitted.

Are there any questions of this witness?

CROSS EXAMINATION

BY MR. LOSEE:

Q Mr. McKeel, in comparing the log in the Bluestem and the Delaware Apache Koch Federal No. 2 Well, shown on your Exhibit Two, isn't it true that the log looks

a little better on the Delaware Apache Koch in the P-1 zone?

A There appears to be a little more porosity, yes, sir.

Q And would that not indicate that at least in the P-1 zone, where there's only 2-foot -- 2 feet difference in the structure, that there's (not understood) amount of gas appearing south of the well?

A I have indicated on my cross section that there is 10 foot difference, sir.

Q A comparison of the two logs would indicate that you do not have gas produced down in that area also?

A I don't believe that's necessarily true, sir. That could be watering out down at that end. This is what -- what we've seen in the P-2 zone is -- is -- follows this pattern, is that even though we do increase porosity down dip, that that does not necessarily mean you're going to have a better producing well.

Q The Yates "ZR" Well is actually six feet lower, is it not, than the Delaware as shown on your Exhibit One?

A No, sir, it is about 17 feet lower.

Q No, I'm talking about the Delaware Apache, comparing it with the Yates --

A Oh, Delaware Apache, yes, --

Q -- which is south --

A That's true, yes.

Q And it's producing gas, is it not, the Yates "ZR"?

A Yes, it is.

MR. LOSEE: I think that's all.

MR. STAMETS: Are there other questions of this witness?

He may be excused.

MR. CARR: At this time I would call Ted Duff.

TED EDWARD DUFF,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Would you state your full name and place of residence?

A Ted Edward Duff, Midland, Texas.

Q And by whom are you employed and in what capacity?

A Union Oil of California.

Q And in what capacity are you employed?

A Petroleum engineer.

Q Would you briefly review your educational background and your work experience for the Commission?

A I received a BS degree in petroleum engineering from New Mexico Institute of Mining and Technology in May, 1982, and have since been employed by Union Oil.

Q Are you familiar with the application filed in this case?

A Yes, I am.

Q Does your area of responsibility for Union include this portion of southeastern New Mexico.

A Yes, it is.

Q Are you familiar with the subject area?

A Yes, I am.

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

Q Mr. Duff, are there special pool rules in effect for the Bluitt-San Andres Pool?

A Yes. In addition to statewide rules we have associated pool rules and in addition to that we have special pool rules for the Bluitt-San Andres.

Q What are the requirements for this pool as set forth in those rules?

A Gas well spacing requirements provide for a well to be drilled no closer than 990 feet from the quar-

ter section line and no closer than 330 feet from the quarter quarter section line.

Q What are the gas well spacing requirements set forth in that rule; i.e. the spacing dedication?

A A standard gas proration unit is 320 acres.

Q How many acres are there in the proposed unit, the unit Yates has proposed?

A 160 acres.

Q Half that required for a standard unit under the rules.

A Yes, sir.

Q If this well was drilled on a standard quarter section, how far back from the outside lease or unit boundary would a well have to be located to be at a standard location?

A It would be 990 feet from the lease lines.

Q Now this is not a standard unit, but how far back from the unit boundary line do you believe the well would have to be located if, in fact, it was to comply with the rules?

A I believe an orthodox location would be 990 feet from the lease lines and that would prevent -- protect offset operators.

Q Would you refer now to what has been marked for identification as Yates -- I'm sorry, as Union of California Exhibit Number Three --

A Yes, this is --

Q -- identify it and review it, please?

A Yes, this is a curiosity plat of the area. I've shown the subject well, the Yates No. 1 "ZL", shown by the red arrow. Union's acreage is outlined in yellow and on this I have a date of first production, cumulative oil production to 9-1-85, and current production in August '85.

Q Would you now go to what has been marked as Union Exhibit Number Four and review this?

A Exhibit Number Four is a close-up of the areaa. Again the Yates No. 1 "ZL" is shown by a red arrow; Union's acreage shown outlined in yellow, and this plat shows the distances from the lease line of the Yates "ZL", 330 from the west and additionally it shows an orthodox location being 990 and 990 from the north and west and the difference between the two wells, 933.4 feet.

Q And, Mr. Duff, the Yates well is a gas well?

A Yes, it is.

Q Do you believe that production from this well should be restricted by a penalty placed on its produc-

tion due to its unorthodox location?

A Yes, because it will drain reserves from Union's acreage and that could not be offset by counter drainage.

Q Can you recommend to the Commission how a production limitation factor should be calculated or obtained?

A Yes. We'd recommend that it be calculated by a method that has been approved by the Commission previously.

Q Mr. Duff, would you now refer to Exhibits Number Five and Number Six, and review for the Commission how you recommend a penalty be calculated?

A Okay. Exhibit Number Five is a production limitation factor calculation sheet and summarizes the calculations involved.

The production limitation factor is made up of three different parts, one being a north/south factor, east/west factor, and the third being a net acre factor.

The north/south factor and the east/west factor are encroachment upon the lease lines and are calculated from the distances of the well to a standard location.

Both these calculate out as 33.33 percent, or in other words, the well is 66.667 percent too

close to the lease lines.

The net acre factor is a drainage encroachment calculation. I've shown it graphically on Exhibit Number Six.

We take a standard proration unit of 320 acres, assume radial drainage, and we'll draw two circles, one at a standard location and one at the location, and I've shaded in Exhibit Six an area which is blue and that shows the advantage gained by the unorthodox location.

The calculation of this area of advantage gained is 88.03 acres and that represents 27.51 percent of a standard unit. That would be the encroachment so the net acre factor would calculate at 72.49 percent.

Now, for the total production limitation factor you'd take these three parts, take the arithmetic sum of them, which for a 320-acre proration unit would be 46 percent, and for 160 acres would be half of that, or 23.19 percent.

In summary, the well would be allowed to produce 23.19 percent of its deliverability and meaning the well is penalized 76.81 percent.

Q Now, Mr. Duff, are you familiar with the production limitation factor that was imposed by Order R-8025?

A Yes, I am.

Q Was that penalty correctly computed in that order?

A No, I don't believe it was. I believe it had an arithmetic error in it and should have been 23.19 percent.

Q And what you're recommending here today is the same penalty that you recommended at the time of the Examiner Hearing in this case.

A Yes, it is.

Q What is your recommendation, then, as to what the well should be allowed to produce?

A Well, I believe it should be allowed to produce only 23.19 percent of what it's capable of producing into a pipeline.

Q Do you -- would you -- do you believe the use of this formula to be unfair to Yates?

A No, I don't, because the method of calculation assumed 320-acre drainage radius. That included quite a bit of area to the south, which is most likely unproductive. I believe most of the drainage will come from the north.

Q Is this a prorated pool?

A No, it is not.

Q And, again, I want to be clear, and ask you again to state what you recommend this penalty be ap-

plied against.

A Well, again I believe it should be assigned against the well's ability to produce into a pipeline.

Q Now what effect would imposing this penalty have on the correlative rights of Union?

A It would protect Union's rights by protecting our acreage from offset drainage which would otherwise be offset by counter drainage.

Q Do you believe that granting the application with the penalty that you have recommended, as you read that, would prevent waste and protect correlative rights of all interest owners in the area?

A Yes.

Q Were Exhibits Three through Six prepared by you?

A Yes, they were.

MR. CARR: At this time, Mr. Stamets, we would offer Union Exhibits Three through Six into evidence.

MR. STAMENTS: Without objection these exhibits will be admitted.

MR. CARR: Thank you. That concludes my direct of Mr. Duff.

MR. STAMETS: Are there any

questions of the witness?

CROSS EXAMINATION

BY MR. LOSEE:

Q Mr. Duff, do you have any reasons to doubt Yates' good faith effort in attempting to drill its Bluestem Well as an oil well at this location?

A It was not orthodox as an oil well at its location.

Q That doesn't answer my question. Do you have any reason to doubt Yates' good faith?

A No, I do not.

Q And that rather than completing it as an oil well, it was completed as a gas well.

A Yes, it was.

Q Are you acquainted with Mr. L. F. Thompson?

A Yes, I am.

Q Is he an employee of Union?

A Yes, he is. He's our District Operations Manager in Midland, Texas.

Q Are you aware of the fact that Yates has made an application for a nonstandard unit and unorthodox location for the (not understood) well that Mr. McKeel discussed?

A Yes, I am, and I have reviewed it.

Q Mr. Duff, I'll hand you a letter dated December 20, which I do not propose to introduce in evidence because it's already addressed to Mr. Stamets, and ask if that is Yates' -- not Yates', Union's response to the Yates application on the (not understood) well?

A Yes, it is, and I authored the letter.

Q Okay. Would you read the highlighted language into the record, please?

A Okay. Since it is not always possible to predict the producing GOR for a proposed well, Union feels that if an operator in the Bluitt-San Andres Pool has in good faith drilled legally for one type of hydrocarbon, oil or gas, and subsequently has to be approved to produce the other type, no objection should be raised.

Q Is the Union 120 Well which is in a portion north of the Bluestem, open in the P-1 gas zone?

A No, sir.

Q When you drilled the well did you test the P-1 gas zone?

A No, we did not.

Q Do you have any present plans, does Union have any present plans to open that gas zone?

A We are currently evaluating opening up P-1 zones in wells in the area and additionally we're evalu-

ating secondary recovery as well as infill drilling.

Q Secondary recovery of the oil zone.

A Yes, sir, P-2.

Q How long have you been evaluating this program?

A A little over a year I've worked on it. It's been evaluated in the past.

Q Is Union any closer at this time to making -- to determining whether to open the P-1 zone than it was a year ago?

A No, we are not. We were awaiting the outcome of this case is one of the reasons.

Q If Union were to attempt to open that P-1 zone, what acreage would you dedicate to the -- could you dedicate to the well?

A We could dedicate 80 acres, which is the proration unit existing under the oil at this time.

Q What 80 acres is that?

A It will be Section 20, Unit B, and then 40 acres immediately north of that.

Q Do you have a -- has the Commission approved the nonstandard unit for that well, Union well?

A Yes, it has.

Q Do you know what order number it was?

A I don't have that up here with me but I

could get it.

Q I see to the east, the northeast quarter northeast quarter of Section 20, your Exhibit Six shows that to be a Yates lease.

A Yes, sir, that's correct.

Q That's the adjoining 40-acre tract.

A Yes, sir, that was obtained a couple months ago, I believe.

Q At a competitive bid at a Federal competitive sale?

A Yes, sir.

Q Did Union bid on that tract?

A No, we missed that altogether. We would have liked to.

Q You don't bid on Federal competitive bids?

A We do, but they need to catch it in the office to know about it and they missed this one.

Q Now I notice the two Tenneco wells to the west, Tenneco 1 and Tenneco 2. Testimony indicates they're both producing gas. Do you know whether Tenneco received approval of this Commission to simultaneously dedicate those two wells?

A Yes, I understand they did.

Q At the same time did they get approval to

produce them as gas wells at 660 locations?

A Yes.

Q Did Union object to -- about that application?

A No, we did not, and again we did not catch it, catch the notice of the hearing.

Q That was an administrative approval, was it not, and not a hearing?

A I think it was.

Q And isn't the operator seeking administrative approval of a nonstandard unit at an unorthodox location required to give notice to offset operators?

A Yeah, I think they are.

Q Do you know whether or not Union received the notice?

A I never did in my office but that doesn't mean that we did not receive it, though --

Q But you --

A -- but I was unaware of it.

Q You did not object to it.

A Not, being unaware of it, I did not object.

Q When did Union become aware that these two wells had been opened in the P-1 zone?

A It was about two months after they recom-

pleted them, I believe. I was talking to Tenneco on the phone and they told me they had recompleted them as gas in the P-1 zone.

Q Did you raise any -- did Union raise any objection at that time?

A No, it had already been approved.

Q Of course, if Union had not received notice they would have been in a position to raise objection, would they not?

A Yes, I suppose so.

Q Do you think the P-1 zone in the Yates Bluestem Well will drain 320 acres?

A Most likely not.

Q Well, it really won't, will it?

A Most likely it won't.

Q Mr. Duff, I asked you the same question at the Examiner Hearing in June and your response -- I said to you that -- do you think that P-1 zone is going to drain 320 acres in this area?

And your answer was, no, I don't.

Have you changed that -- your mind on that, or is the answer still no?

A Are -- those are both negative answers.

Q Well, one is -- has a little question mark after it.

A No, I do not believe it will drain 320 acres.

Q All right. If you admit that the Bluestem Well will not drain 320 acres, why does Union use 320 acres to calculate its net acre factor in the formula it proposes?

A That's based on a standard unit spacing requirements from the Commission which determine that a gas well in the Bluitt-San Andres should drain 320 acres.

Q But -- and that's solely based on what the standard spacing unit is and has no relation to the actual drainage area of the well.

A Right. I do not believe that any of us here have enough information to say how much that will drain at this time.

Q But you say it will not drain 320.

A I do not believe it will.

Q Under your formula, if the well was capable of draining 640 acres, would you still use 320 acres as the net acre factor?

A Will you repeat the question, please?

Q If a well, the offending well, actually was capable of draining 640 acres, would your formula still use -- where the spacing was 320 acres -- would it still use 320 acres?

A I would still use 320 acres.

Q Now if the offending well only drained 40 acres, I suppose you would also still use 320 in your formula.

A Yes, I would, because it has been an accepted method before the Commission.

Q Even though it may have no -- the formula may have no relation to the actual drainage area of the well.

A It has some relation to it. These formulas are -- they're rough formulas but they're the best that we have to go on at the time.

Q Well, --

A For example, we're assuming radial drainage here, also, which might not be the case, but you have to make some assumptions to come up with the calculations.

Q I realize, Mr. Duff, that your testimony has been that if the well would drain only 40 acres, 640 acres, it makes no difference, you would still use 320 acres in your formula.

A Yes, that's correct.

Q So that Union is suggesting to this Commission that the advantage obtained by the Yates offending well at an unorthodox location is the same whether or not that well drained 40 or 640 acres.

A If the Commission has given 320 spacing, yes.

Q So that the actual drainage area under your interpretation of the formula, actual drainage area of the well, has nothing whatsoever to do with the advantage obtained by the offending well.

A No, that's incorrect.

Q Explain it.

A The Commission has provided spacing rules based on what a gas well should drain, and in this case it's 320 acres and we do not know if it's 40 acres or more or 160, so we go by the spacing rules, which is the best thing we have to go on at this time.

Q Okay, Mr. Duff, isn't it true that the Commission, for instance, has spacing rules of 320 acres in this San Andres; statewide rules in southeastern New Mexico are 320 acres from Wolfcamp down; they're 160 above it; but isn't it also true that in each of those cases the Commission makes exceptions where evidence is introduced to show the drainage area is greater or less than that provided by the state rules?

A Yes.

Q And isn't the evidence, the only evidence here, that that well will drain 50 acres, the Bluestem Well?

A No, I don't agree with the 50 acres. If

we are seeing communication between the wells, it's at least that far.

Q Well, now, your communication between the wells is not in the gas zone, is it?

A No, it's not.

Q And isn't it true that communication is coming from a substantially depleted well?

A Yes, it is.

Q And that's where the communication is, it's not from gas.

A Yes.

Q Isn't it true, Mr. Duff, that the Yates Bluestem Well by reason of its unorthodox location hasn't really obtained a 77 percent advantage over the offsetting Union acreage?

A I believe it has.

Q Your formula calculates a total production limitation factor of 46 percent. Is that correct?

A For a 320-acre proration unit, yes, sir.

Q And then you reduce it one-half by reason fo the fact that the proration unit is only 160 acres.

A Yes, sir.

Q Are you suggesting that because Yates has proposed a nonstandard 160-acre unit rather than the 320-acre unit, that gives Yates that great -- 50 percent greater

advantage over these offsetting operators?

A No, I think both the production limitation factor and the acreage reduction should be considered separately, and the production limitation factor based on a standard proration unit, because regardless of how much acreage you dedicate to a well, you still should go by the standard area of drainage.

Q So that you are saying that your 46.4 penalty is the advantage obtained, is that correct, over the Union well?

A If you were producing from 320 acres dedicated to the well, yes.

Q Well, let's back up. Maybe I didn't get my question right.

The rules of the Commission, 104-F provide that when the Commission makes an exception to the well location rules it will take such action as is necessary to offset the advantage obtained by the offending well, and my question here is what advantage does Union believe the Yates well has over the offsetting -- I mean the Yates well has over the offsetting acreage? Is it 46 or 23 percent?

A It's 23.19 percent if you dedicate 160 acres.

As you can see on Exhibit Six, the circle goes outside that 160 acres, even on a standard, orthodox

location.

MR. STAMETS: If I could interject here, I think there's confusion on this point, Mr. Losee, and let me see if I can clarify it.

MR. LOSEE: Okay.

MR. STAMETS: Mr. Duff, I believe that it would be your intent that the Yates well produce more than -- no more than 23.19 percent of the regular allowable for a well in a similar situation in order to offset the advantage gained by its location, is that correct?

A Yes, sir.

MR. STAMETS: So the penalty, then, would be the difference between 23.19 and 100.

A Or 76.81.

MR. STAMETS: Yeah.

Q Well, now, I guess I understood Mr. Stamets' quesiton but I -- and I understood Mr. Duff's answer, but I have difficulty with the 23 percent. It seems to me that the formula you have calculated reflects an advantage obtained by the Yates well regardless of what acreage is dedicated to it, or 46 percent.

A No, I believe it's --

Q Based on the drainage area.

A I believe it starts out, if you dedicated 160 acres to a well that had a 320-acre standard proration

unit, you should start out at a 50 percent reduction to begin with, and then apply a limitation on that.

Q Do you think the 50 percent reduction is -- should be granted because of the advantage obtained by the offsetting well?

A That's because of the acreage that is dedicated --

Q But that's not being --

A -- not -- not because of the advantage, no.

Q That's really because of the Commission rules that provide if you have a nonstandard unit in an allocated gas pool, the allowable is reduced in relation to the acreage in the spacing unit, in a normal spacing unit.

A Yes.

Q And it's not because of the unorthodox location rules in speaking of advantage obtained over offsetting acreage.

A Right.

Q So that really the advantage you say that Yates secures in this case is 46 percent, is it not?

A On the unorthodox location part of you-all's request.

Q Thank you. So that when you said that Yates has obtained an advantage of 77 percent over offset-

ting operators, you really meant that Yates has obtained an advantage of 54 percent over offsetting operators, did you not?

A No. I believe that Yates has gained an advantage by the unorthodox location for 46.38, and in addition, they have gained an advantage of 50 percent by dedicating half the acreage.

Q Let's go off the subject; I think we've hassled that enough, Mr. Duff.

After completion of the Bluestem Well did Yates offer you -- Union the opportunity to participate in the Bluestem Well?

A Yes, after it was completed.

Q By paying Union's actual share of the cost of completing, drilling and completing the well, it's proportionate share?

A I don't understand the question.

Q Well, Union had a 40-acre tract and if Yates were going to dedicate 160, that would mean that the spacing unit would be 200 acres, and the offer was made, I think, to participate with Union paying 40/200ths of the cost of drilling the well.

A No, that was declined by Union for the fact that we could not dedicate that acreage simultaneously for oil and gas wells.

Q But you offered, did you not, Union did, to withhold your objection to this application in return for a 1/8th net overriding royalty on the Bluestem Well, did Union not?

MR. CARR: Mr. Stamets, I'm going to object to this line of questioning. We're happy to stipulate and state to the Commission that we tried to resolve this without coming to you. These are some of the negotiations we attempted and I don't believe they're relevant to the question of what kind of a penalty should be placed on the well because of the unorthodox location.

We didn't reach an agreement.

MR. STAMETS: Mr. Losee, do you desire to proceed?

MR. LOSEE: No, I've asked all the questions I care to of this witness.

MR. CARR: Nothing further.

MR. LOSEE: I think that's all.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Duff, assuming that there was an arithmetic error there in the original order, and the allowable factor then would be 23.19 percent, -- let me start from a different point on that same issue -- in answer to

one of Mr. Carr's questions you indicated this was not a prorated pool but if memory serves, all the associated oil and gas pools in the state are prorated and the gas allowable for a gas well is based upon the allowable limit, GOR allowable limit for the oil-spaced unit.

In other words, with 320 acres dedicated, a gas well can produce 8 times the amount of gas that an oil well can produce.

Is that correct?

A I believe it is, yes, sir.

Q And that the present allowable of 80 barrels a day and a 2000-to-1 gas/oil ratio, that would be 160,000 a day for each 40-acre tract, is that correct?

A That would be only for 40 acre?

Q Yes.

A I believe so.

Q So based upon your penalty formula Yates would wind up with acreage factor of 74.2 acres in this unit; multiply 23.19 percent times 320 acres, I think that come out to 74.2 acres.

A Okay.

Q If you utilize that times the GOR limit it seems as though you come up with a limitation of 296.8 MCF a day.

A I don't think a limitation of 298 would

protect Union's correlative rights here. There should be a better way of applying a penalty to a well if the Commission decides that a penalty should be imposed.

Mr. Stamets, I'd recommend the penalty be assessed against the well's ability to produce into a pipeline, which could be determined by semi-annual deliverability tests and would be the actual rate the well is capable of producing.

Q In pools where -- where there is an allowable formula, to my knowledge, we've never done that, (not clearly audible) in the past, but all penalties have been applied against acreage -- if we assume that Mr. Boneau was correct in saying the well is draining 50 acres, that would be one and a quarter times 40 and that comes out to about 200 MCF a day, and then again if we look at his exhibit which shows the amount of acreage being drained off their proration unit, on 50 at the unorthodox location versus the standard location, it does seem as though there would be some penalty applied to even 50 acres.

If they're draining only 50 acres, is that having any significant impact upon Union?

A It has some impact on it, but I think it's a little too early to say 50 acres at this time. That was done by a decline curve analysis and it's pretty early in the well's life.

Q Has anybody with Union examined the logs or the drilling records, to determine if there is gas in the P-1 zone under Union's lease?

A I've looked at the logs. The well was drilled in 1971 and they're older logs.

It does have developed porosity, which is continuous throughout the field, and I would believe, yes, there's gas there.

Q At the present time Union's not completed in that zone.

A No, sir, we're not.

Q So we cannot be absolutely certain that there's any gas there for Yates to be draining.

A Most likely there is, being up structure, with porosity.

MR. STAMETS: Any other questions of this witness?

MR. LOSEE: Yes, the Examiner's question raised one.

RECROSS EXAMINATION

BY MR. LOSEE:

Q Mr. Duff, do you know the production of the offsetting Tenneco Well No. 1, I think is the direct offset to Union?

A Yes. I show in August of '85 Tenneco produces 60 MCF gas per day in the No. 1, and 51 MCF gas per day in the No. 2. and these are from the P-1 zone.

Q Do you have any other productions on it? Are they all generally 50 and 60 MCF?

A Those are the only two gas wells that I have.

Q Well, that's for one -- is that for one month? Do you have any other months or --

A Just one month. I think they're averaging about 60.

Q Okay, I think that's all.

MR. STAMETS: Any other questions of the witness?

He may be excused.

(Therepon a recess was taken.)

MR. LOSEE: I wish to have Mr. Boneau testify shortly on redirect.

MR. STAMETS: All right.

DAVID BONEAU,

being recalled and being previously sworn upon his oath, testified as follows, to-wit:

REDIRECT EXAMINATION

BY MR. LOSEE:

Q Would you please refer to what has been marked as Exhibit Nine, which compares the results of the Union formula and explain that exhibit and these accompanying Exhibits Ten through Twelve?

A Yes, sir. We made the point that the formula proposed by Union gives the same allowable factor regardless of the actual drainage area of the unorthodox well and that is the main thing that Yates objects to. That is one of the things that Yates objects to in the logic behind that formula.

Exhibit Nine is a compilation of what area actually lies on the Bluestem lease and what area would lie within 160-acre circle for various drainage areas.

Union and Yates are not able to agree exactly on what the drainage area is and so I prepared an exhibit that covers, I think, the reasonable range of drainage areas that the two companies would believe.

So the facts involved here, we have a standard spacing unit, which is 320 acres. Our application is nonstandard spacing unit, 160 acres. The actual unorthodox location of the well is 330 feet in the east/west direction and 330 feet in the north/south direction from the

lease line and the orthodox location would be 990 feet from those two lease lines.

The first column in Exhibit Nine lists drainage areas from 40 to 640 acres and that's the range that we're going to discuss here.

The Commission formula proposed by Union gives the same allowable factor regardless of that drainage area.

The fraction of the drainage area which is on the Bluestem lease listed in the third column of this exhibit, and the pictured in Exhibits Ten, Eleven, and Twelve, show these drainage areas and allow you to see that these numbers are reasonable.

Okay, in the 40-acre case, 58 percent of the drainage area lies in the Bluestem lease and it's not down -- not until you get to a 640 drainage area that the fraction of the drainage area on the Bluestem lease falls as low as 24 percent.

The fourth column of Exhibit Nine shows the fraction of the drainage area which is either on the lease or within 160-acre circle around the nearest orthodox location.

These fractions range from 90 percent for a 40-acre drainage area down to 29 percent for a 640-acre drainage area.

The 50-acre drainage area that we believe is correct falls in between 40 and 80 and gives the 85 percent number that was quoted earlier.

Our thoughts behind these numbers are that a well surely should be entitled to drain that portion of its drainage area which lies on its own spacing unit.

Further, Union admits that -- acknowledges that an unorthodox location for a well may result in legitimate drainage of some hydrocarbons from outside the spacing unit, so we submit that absolutely no way the allowable should be smaller than the number in column 3 and it should be bigger, as even Union acknowledges, and we propose the relevant way to do it is what is exhibited in column 4 and results in the 85 percent factor for a 50-acre drainage.

Q I'm sure, Dr. Boneau, that your Exhibit Six, plus it's accompanying exhibits, which really support the summary that's shown on Exhibit nine, is intended to show, is it not, that to the extent the formula proposed by Union uses 320 acres as a net acre factor, it's unrealistic, to say the least, with respect ot a well that will drain something less than 320, and in your opinion approximately 50 acres, is that not correct?

A A well draining 50 acres is being treated unfairly if it's -- if the penalty invoked is based on a 320-acre spacing unit, which is no relation to the facts.

Q And, Dr. Boneau, the allowable factor you propose is reflected on your Exhibit Six that you introduced earlier -- that was introduced earlier, isn't it?

A Yes, sir, that's the 85 percent factor and that's --

Q Exhibit Six.

A That's Exhibit Six, and that's intended to account for both the unorthodox location and the nonstandard spacing unit.

MR. LOSEE: I have no further questions.

MR. STAMETS: Mr. Carr, let me ask Mr. Boneau a couple first.

RECROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Boneau, on Exhibit Six the 85 percent which you've got down there at the bottom line, that's 85 percent of what?

A I think that's most clearly shown on Exhibit Five, the picture. 85 -- there's -- on Figure 5 there's a 50-acre circle around the Bluestem location. Okay?

85 percent of that circle lies either on the Bluestem lease where it's not colored or in the red

area, and only 15 percent lies in the blue area.

Q Do you want 85 percent of the 50 acre allowable or a 160-acre allowable or a 320-acre allowable?

A There's very much confusion on that point. I need to answer the question that the Examiner ask.

Personally, I would do what Mr. Duff suggested and have a six-month deliverability test and give us 85 percent of that number.

That doesn't fit in with your scheme of things and whatever number you decide, the Commission decides is the right number, we should have 85 percent of it.

The, and surely you'll agree that the calculated absolute open flow is a large number and, you know, what's happened here in Order 8025 is that we are granted a ridiculously low allowable factor and a higher than reality dictates CAOF or, you know, base factor. Multiplied together they gave a halfway reasonable result but the procedure lacks, and we would like to make the point that somebody ought to address straightening up the procedure.

Q Your testimony is that there are only 50 acres producing in this -- under this well.

A Yes, sir.

Q But you've got 160 acres dedicated to it. Is there any reason why under those circumstances Yates

should be assigned a 160-acre allowable?

A Yes, because the formula that somebody got us all boxed into, you know, gives even more ridiculous answers if you go to a 40-acre allowable as you seem to be suggesting. Those calculations and the Union formula gives 7 percent, 7.8 percent allowable in that case, when in reality, you know, over half the gas is coming from that 40 acres.

Q Mr. Boneau, it's not clear to me that an allowable formula which gives you an allowable based on 74.2 acres is ridiculous when your testimony is that you've only got 50 acres producing.

It may be that the formula is --

A No, you don't --

Q -- over generous.

A -- you missed my point. Or I missed your point; I think probably both a little bit.

But the result of Order 8025 is within the realm of reason. It's within the realm of reason because, as I interpret it, because it takes a 23 percent allowable factor, which I consider ridiculously low, and it takes an absolute open flow number, 900-and something or your acreage, and which is higher than reality, multiplies them together, and gives your 74 acre number, which is within reason of my 50 acre number, but the way that you got

there is by two wrongs, putting two wrongs together and, of course, I especially object to the wrong that is against us and less vehemently against the wrong which is in our favor.

We're finally getting to what we came here to talk about.

Q It's a mystery to me that the formula which gives you more allowable than the well can produce, which assigns you more acreage than you actually indicate is productive, how that can have been ultimately a bad formula. Perhaps that's the evidence that the formula is over generous as opposed to being something that's really --

A But the part that's --

Q -- being a problem.

A Excuse me. The part that's been detailed is the allowable part, Union's (not understood). What it's a fraction of is much more -- much more vague, and apparently both Union and us were under the impression that it was a fraction of a deliverability and that's the way I've been operating and Mr. Duff's testimony seemed to indicate that that's what he understood.

You have introduced some talk about --

Q Having read the order again this morning, I think that's not clear on that point. Certainly there were some issues in this hearing that will clarify that.

A And what I'm saying is on the allowable

part, which we have detailed to a great degree, it's just plain unfair. I don't know if the level that you applied this allowable against is unfair because it's a moving target at the moment.

MR. STAMETS: Are there other questions of this witness?

Yes, Mr. Carr.

RECROSS EXAMINATION

BY MR. CARR:

Q Dr. Boneau, for the purpose of this cross examination I'd like you to look at what has been marked as Yates Exhibit Number Ten. The Bluestem No. 1 Well, the well that's the subject of today's hearing, is located north of the nearest orthodox location that you indicated on the subject 160-acre unit, is that correct?

A Yes, sir.

Q Moving to the north you're moving up structure?

A Yes, sir.

Q And in moving up structure you're moving into where you anticipate better pay.

A We did anticipate better pay in the oil zone, yes, sir.

Q Based on your study of the area, do you

have any reason to believe that there are not recoverable gas reserves under the 40-acre tract to the north in the P-1 zone?

A No, I believe Union would produce some gas if they perforated that zone.

Q Now, if we look at this exhibit, the circle around what is labeled the nearest orthodox location is, as you previously testified 160-acre circle. That's the acreage, corresponds to the acreage you've dedicated to the well.

A Yes, sir.

Q And in all of your calculations you continued to use as one of the elements in these calculations, that 160-acre drainage area.

A Yes, sir.

Q And then we go to the "ZL" No. 1 Well and you have one circle around that that contains, I believe from this, 35 acres.

A No, there's a 40-acre circle and an 80-acre circle.

The 35-acre number refers to the area of the red.

Q All right.

A The 40-acre number refers to the area of the green, and the 19-acre number refers to --

Q Based on your understanding of this reservoir, do you believe that a gas well at what you have labeled the nearest orthodox location would drain an area containing 160 acres or do you believe it would have a drainage area more in line with the Bluestem Well?

A It would have a drainage area more in line with the Bluestem Well.

Q And if that is the case, then, at an orthodox location there would be no drainage from the Union acreage to the north?

A At an orthodox location we might not even drain our own acreage, yes, sir.

Q Now if we look at -- in preparing for today's case you've reviewed the prior testimony.

A Yes, sir.

Q And in that testimony didn't Yates testify that they thought the Bluestem Well would drain 80 acres?

A I believe that's correct, yes, sir.

Q And so that 80-acre circle would correspond to that -- to that testimony.

A Yes. That testimony was based -- was not based on the production data which we now have and I think that my numbers are better than that because we have more data, but you're right in what you say, yes, sir.

Q And your calculations that you're presenting here are directed towards the acreage additional drainage encroachment on the offsetting property, is that correct?

A If I understand what you mean, that's correct, yes.

Q Now, also, to be sure I understand your prior testimony, although there is a penalty under the prior order on this well, the penalty is in no way restricting the well's current producing rate.

A That's my understanding and Mr. Stamets has suggested some other way that that allowable should be calculated, but trying ot run through the calculations during the break it seemed that those, that even what he suggests would not really affect what the well can produce. We could produce what the well could produce.

Q And at 200 MCF per day, you do have a commercial well, do you not?

A It's close. The well will probably pay out. No one will get rich on the venture but the well will probably pay out eventually.

Q Didn't Mr. Mahfood testify in the last hearing that 200 MCF a day is necessary to make a commercial venture here?

A I'm sure you remember better than I.

Q Thank you.

MR. STAMETS: Mr. Losee, what additional exhibits have you tendered at this time?

MR. LOSEE: I move the introduction of Exhibits Nine through Twelve. We skipped Seven and Eight and Thirteen, even though you have them in front of you.

MR. STAMETS: Exhibits Nine through Twelve will be admitted.

MR. LOSEE: No further questions.

MR. STAMETS: He may be excused.

Does anyone have anything that they wish to offer in this case?

MR. CARR: I have a closing statement.

MR. STAMETS: You may proceed.

MR. CARR: Mr. Stamets, Yates is before you seeking approval of an unorthodox well location. They have pointed out that Union has recognized in correspondence to them that as we go from gas wells to oil wells that there may be affects on drainage and they didn't object.

But I remind you that that let-

ter said that wells that are legally drilled, and the original well location in this case was an unorthodox location for which no approval was obtained. We think that Yates quoting in the letter is certainly proper but I think it's important to show you what the real meaning of the paragraph quoted actually is.

They're here today before you. They're talking about how unfair a penalty is but they admit that their well is in fact unrestricted by the penalty that has been imposed. They come in today and say that we're going to attack this penalty imposed because it's really unfair, it's a bad penalty, bad way to go about this.

I'd just call to your attention that when this whole approach was devised back in September of 1978, the first time it was ever used was imposing a penalty on an unorthodox location for a well drilled by Yates. This is the first time they've ever deemed it adviseable to come in and attack it on the grounds that there's something fundamentally wrong with the formula itself.

They attack it, but they come in with limited information as to how the situation could be improved. And in fact they've come in here and have presented testimony as to how the net acreage encroachment factor could be calculated, and they're only talking about one of three factors which we traditionally use in setting a

penalty, and what we'd come up with if we gave them a full 100 percent on the encroachment side of this due to the fact that they're 66 percent closer to the north line and the west line and confronted with the fact that we use the formula at all, we still haven't come up with in excess of 55 percent that would then have to be reduced to the acreage dedicated.

Union is seeking a penalty on the production from this well and we're asking you to act under Rule 104-G.

As Mr. Losee stated, it authorizes the imposition of a penalty to offset an advantage gained by an unorthodox location. We submit to you that however you come out on this and however you impose a penalty, today the penalty that let's the well produce at an unrestricted rate is ineffective in penalizing a well that is two-thirds too close to our acreage; a well that is draining gas from the zone that Dr. Boneau stated contains gas and can be produced on that 40-acre tract.

We've come in with a standard formula and we've stood before you and have asked you to base it on the spacing requirements. I think that's the correct thing to do. I think if you don't do that, we wind up with exhibits that look a lot like Yates', where every factor is constructed so it benefits only the person who's

advancing the exhibit.

We're not talking here about a change in the pool rules. That's not before you today. The pool rules require 320-acre spacing and proration units. We're not talking about what we dedicate to the well. That's something that Yates has within its control, and 160 acres is based only on what their acreage position happens to be in this area.

They've come in with a formula that is always based on 160-acre drainage for a well at the nearest orthodox location and they got that and yet they admit that if they were trying to be as accurate with that factor as they are with what the subject well would drain, which would be substantially smaller and that in effect that would mean that this blue area, the additional area of drainage, would be increased.

They indicate if they drilled at a standard location they might not even be draining from anyone else, and no matter what exhibit you look at and no matter what they calculate, that well to drain, the unorthodox well to drain, they're draining the vast majority of those reserves to the north from acreage that they do not own.

We are asking you to simply enter a penalty that would be effective. Just because you

haven't done it before and tied it to what the well would produce into a pipeline, we submit it doesn't mean you can't do that now. If you don't do something like that the penalty will be academic and we will be right where we are today, a well producing under a penalty, but a well producing at an unrestricted rate that is two-thirds too close to an offsetting property, a property under which there are commercial gas reserves.

MR. STAMETS: If there is nothing -- oh, you have a closing statement, Mr. Losee, I'm sorry.

MR. LOSEE: Thank you. Having been the attorney for Yates when this formula was established and you all (not clearly understood) it in 1978, I really thought it was about 1977, and I don't know whether Yates has done anything since then about the formula but the only reason Yates didn't at the time was that the well fell on its face, (not clearly understood) a Morrow well southeast of Artesia, and a discussion was had.

Union objects to -- well, Yates comes in and requests a production limitation factor of 5 percent of deliverability.

Union objects and using the formula, which I will grant the Commission has used to the best of my knowledge since 1978, proposes a production lim-

itation factor of 23 percent.

I thought at the time and Yates thought at the time and thinks today that the formula, to the extent that it ignores actual drainage area of the well, the best evidence of the area, is arbitrary, capricious, and that's exhibited simply by Mr. Duff's response to my question that whether the well drains 40 acres or 640 acres the formula is going to stay the same and, obviously, it seems to me, at least, that the effect on offset operators is multi-times greater if the well is capable of draining 640 acres and I recognize that 320 is the spacing provided in this pool, yet if you look at the map you'll notice these gas wells are not on 320-acre spacing.

In Tenneco's Well No. 1, that's been a secondary target to the south of the pool, in the southeast, and just as if the Commission grants exceptions to spacing rules when evidence shows that it should be greater or less, I submit to you that it should also grant exceptions to this formula when the evidence indicates that the drainage area is not whatever is the standard for that particular area.

At this point Union's been evaluating that P-1 zone. Clearly they don't have enough acreage to dedicate to it. For one reason or another they didn't even make a bid on the offset 40 that would have

logically gone into the spacing unit.

You know, the fact that they didn't object to Tenneco has a bearing on this case only to the extent that it shows their lack of intent, really, to produce their well in the P-1 zone, and Yates submits that in this case the only evidence is, you know, the well is likely to drain approximately 50 acres. Yates grants you that this early in the life we're not able to tell exactly, but even Union admits it's not going to drain 320, and we think the Yates submits that the formula proposed on its Exhibit Three, which if you take only a 50-acre area, 55 percent of the drainage will occur, contrary to my -- counsel's position, from the Bluestem Lease, not from 160 acres.

If you take a 160-acre spacing then approximately 85 percent of the gas will be produced within that area, if the 160-acre circle is at an orthodox location and we submit that that is the proper approach; either the 55 percent of the calculated open flow or the 85 percent, and I think that's what is in evidence before the Commission; that it's not arbitrary (not clearly understood.)

That's all.

MR. STAMETS: If there is nothing further Case 8614 will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

19 November 1985

COMMISSION HEARING

IN THE MATTER OF:

Disposition of cases with no testimony during Commission Hearing held 19 November, 1985.

CASE 8614, 8640, 8463

BEFORE: Richard L. Stamets, Chairman
Ed Kelley, Commissioner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Elliot L. Weinreb
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For the Applicant:

MR. STAMETS: The hearing will please come to order.

This morning first I'm going to call the last three cases which have each been continued to the January 7th Commission hearing.

Those would be Cases 8614, application of Yates Petroleum for an exception to the Special Rules and Regulations for the Bluitt-San Andres Associated Pool;

Case 8640, application of Caulkins Oil Company for compulsory pooling, downhole commingling, and dual completion, Rio Arriba County;

And application -- or Case 8463, application of David Fasken for termination of prorationing in the Burton Flat-Morrow Gas Pool, Eddy County, New Mexico.

Each of those cases is continued to that next Commission Hearing.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR