STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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

APPLICATION OF UNION OIL COMPANY OF CALIFORNIA, d/b/a UNOCAL FOR SPECIAL GAS ALLOWABLES, RIO ARRIBA COUNTY, NEW MEXICO.

CASE NO. 10309

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: JIM MORROW, Hearing Examiner

May 30, 1991

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on May 30, 1991, at 1:30 p.m. at Oil Conservation Division Conference Room, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Freda Donica, RPR, Certified Court Reporter No. 417, for the State of New Mexico.

FOR: OIL CONSERVATION DIVISION

BY: FREDA DONICA, RPR
Certified Court Reporter
CCR No. 417

I N D E X

May 30, 1991
Examiner Hearing
CASE NO. 10309

* * *

E X H I B I T S

A P P E A R A N C E S

FOR THE AZTEC DIVISION: ROBERT G. STOVALL, ESQ.
General Counsel
Oil Conservation Commission
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

FOR THE APPLICANT: CAMPBELL & BLACK, P.A.
Attorneys at Law
BY: WILLIAM F. CARR, ESQ.
110 North Guadalupe
Santa Fe, New Mexico 87501

FOR GAS COMPANY: SARAH D. SMITH, ESQ.

HEARING EXAMINER: We'll start again and call case 10309.

MR. STOVALL: Application of Union Oil Company of California, d/b/a UNOCAL for special gas allowables, Rio Arriba County, New Mexico.

HEARING EXAMINER: Call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm Campbell & Black, P.A., Santa Fe. I represent Union Oil Company of California, and I have one witness.

MS. SMITH: May it please the Hearing Examiner, my name is Sarah D. Smith. I represent Gas Company of New Mexico and Suntera Gas Gathering Company, and we will have one witness.

MR. STOVALL: I'm Robert G. Stovall of Santa Fe, representing the Aztec office of the Oil Conservation Division for the purpose of this hearing. I expect to have one witness when he comes back from lunch.

HEARING EXAMINER: Any other appearances?

Will the witnesses please stand and be sworn?

(Witnesses sworn.)

BILL HERING

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. My name is Bill Hering.

Q. Where do you reside?

A. I live in Farmington.

Q. By whom are you employed and in what capacity?

A. I'm employed by Union Oil Company of California where I work as a district petroleum engineer.

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

A. Yes, I have.

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

A. Yes, I am.

Q. Are you familiar with the Rincon Unit and the three wells which are the subject of this hearing?

A. Yes.

MR. CARR: Are the witness' qualifications acceptable?

HEARING EXAMINER: Yes.

Q. (By Mr. Carr) Mr. Hering, will you briefly state what UNOCAL seeks with this application?

A. Yes. What we're seeking is a special allowable to be set for three new drilling wells that we intend to drill in the Rincon Unit.

Q. What is the purpose of this application?

A. The purpose of this application is to obtain an allowable of 500 MCF per day for each prorated completion in the three wells.

Q. And what is the long-term plan of UNOCAL in terms of these three wells and what are your long term plans following the development of these three properties?

A. These wells will give us vital information that we need in order to commence a full field development in the Rincon Unit.

Q. Could you identify what has been marked as UNOCAL Exhibit Number 1 and review that for Mr. Morrow?

A. Exhibit Number 1 is a map of the Rincon Unit located in Rio Arriba County, Townships 26 and 27 North, Ranges 6 and 7 West. It's operated by Union Oil Company of California and has been since 1986. Shown on this map are the three wells that I intend to discuss in more detail. Two of these wells, the 175M and the 158M, are proposed Dakota-Mesaverde duals, and the Rincon Unit Number 192E is a Dakaota-Gallup dual.

Q. The Dakota-Mesaverde formations are prorated gas pools in northwest New Mexico?

A. That's correct.

Q. In this unit, are all formations unitized?

A. Yes, they're all unitized to all depths.

Q. What is the current development status of the Rincon Unit?

A. Currently, the Dakota is developed on 320-acre spacing. The Mesaverde is also developed, to a large extent, on 320-acre spacing, and to some extent on 160-acre spacing in the northern portion of the unit.

Q. Is it fully developed?

A. No, it is not fully developed.

Q. Let's move to Exhibit Number 2. Would you identify this, please?

A. Exhibit Number 2 is made up of three C102 plats. And on these plats you'll see that there are existing wells in the subject pools. The first plat is for the 158M. Its dedication is the south half of the section, and existing wells in that south half include the 158 Dakota well which is currently idle, the Rincon 33 which is a Mesaverde well and has a D of 128 MCF per day.

Q. Where is the 158M to be drilled on this spacing unit?

A. It will be located in the southeast corner.

Q. Let's go now to the second page of Exhibit Number 2.

A. The second plat is for the Rincon Unit 175M. This has a north half dedication. It will be located in the northwest quarter of the section. Existing on that

proration unit are the 175, which has a D of 103, and the 113, which has a D of 49.

Q. And the final page?

A. The last plat is for the 192E well. Has a west half dedication. It will be located in the northwest corner of the section. And the only other existing subject well is the 192, which has a D of 160 acres.

Q. Let's go to Exhibit Number 3. Would you identify this for Mr. Morrow and then review it for him?

A. This exhibit represents our full field development plan for the Rincon Unit as we envision it today. You'll see here that there are a number of different type wells that we intend to drill. We have a total of six different reservoirs that are productive in the Rincon Unit. Ultimately, we hope to drill 82 wells for a gross recoverable reserve of 126 BCF. The three wells that we'll be discussing are included in these totals. At the bottom of the exhibit you'll see that there will be a total of 52 Dakota completions and a total of 32 Mesaverde completions.

Q. In drilling a development plan, a number of wells under a development plan, how do you go about it in terms of the number of years you anticipate it's going to take? How do you approach this?

A. Well, one thing I should mention is that there has not been a well drilled to these conventional reservoirs

in the Rincon Unit since 1981. So we are without drilling information that would -- that is vitally needed for the development program. So what we would like to do is to determine information that will be vital for us to determine the progress that we should work at. And we feel that the information we'll learn from these first three wells will help us in determining the best schedule.

Q. And that is not set at this time?

A. We have some preliminary estimates that we've worked out, some different scenarios, but it's all contingent on the sort of production that we're going to see in the reserves that we're able to prove up.

Q. Let's move to Exhibit Number 4. Would you identify that?

A. This exhibit I've entitled Allocation Trends. And essentially what I've done here is I've taken the period from 1988 through 1991, and assuming 500 MCF per day proration unit -- in other words, proration unit that has a total D of 500 MCF a day -- and applying the F1 and F2 historical factors, this plot is then derived. And what's shown on the Y axis here is percent of deliverability allowed.

So you can see that at no point during this period would a 500-MCF-a-day proration unit be allowed to produce 100 percent. The trend, however, has been upwards

until just recently. You'll see the flat portions of the curve represent the new six-month allowables that have been set for April through September of this year. Those were just established recently, and they are slightly under the average of the F1-F2 factors for that comparable time period a year ago. Now, the projected lines here are based on the average F1-F2 factors for the comparable period last year. And so there will be some improvement there.

Q. That is assuming that the allowable rates are set in the future at a level equal to what they were set last year; is that correct?

A. That's correct.

Q. And the figures that have recently been set for the six-month period we're now in were, in fact, set above that, were they not?

A. Slightly above.

Q. So this might be an optimistic projection?

A. It could be, yes.

Q. What, basically, does this show you, that the allocation process is basically curtailing Dakota production and Mesaverde production in the area?

A. Yes, that's the intent of this particular exhibit.

Q. Let's go to Exhibit Number 5. What is this?

A. This is a representation of how percent of the

deliverability allowed will vary with the actual deliverability of the well. And my intent in presenting this is to show that a poor well receives more allocation than it can actually produce, whereas a better well is penalized to the extent where, for example, a well having a D of one million cubic feet per day will be able to produce only 50 percent of its D in the case of a Mesaverde and only 35 percent of its D in the case of a Dakota.

Q. Anything else on Exhibit Number 5?

A. No.

Q. Could you explain what Exhibit Number 6 is and what it is intended to show?

A. Exhibit Number 6 is a forecast that I've put together for the new Dakota infill wells that we intend to drill. This is an average forecast for the three wells. And the top curve represents uncurtailed production that I've forecasted. The bottom curve indicates what the situation would be under current allocations. And the stairstep signature to this is because of the new six-month allowables that we have recently instituted.

Now, I'd like to point out that early on there is a lot of competition here between the new infill well and the original parent well. Allowables are shared in proration units, and so until the original well declines in production, the new infill well will not be able to produce

at its full capacity. And that kind of explains why the lower curve increases in production in time.

Q. With an existing well on the unit, do you ever curtail an existing well to -- as part of your plans to drill a second well on a proration unit?

A. No. When we do the economics for an infill well, we do not burden the original well by shutting it in in order to produce the infill.

Q. Let's move to the next curve which is marked UNOCAL Exhibit Number 7. Would you identify that?

A. This is a similar exhibit; however, this is for the Mesaverde formation, and a slightly different scale. You can see here again the same two curves, an uncurtailed case and a curtailed case. Here the competition is a little less between the original well and the infill well, primarily because the average D for a Mesaverde is only 128 MCF a day.

Q. Now, with a 500 MCF-per-day allowable, the well is only going to be restricted in the very early portion of its life; is that correct?

A. That's correct.

Q. In this situation, is it your proposal that the well be permitted to accumulate underproduction, or are you simply requesting a 500 MCF-a-day minimum on that daily or monthly basis?

A. Our request for 500 MCF a day is just that. We are not asking to accrue underproduction. If the well, in fact, only produces 450 MCF a day, we forfeit the 50 MCF a day. We do not carry that forward.

Q. What you're requesting is a 500 MCF-per-day limit, but the even projection for these individual wells show that it would be producing below that level.

A. That's correct.

Q. It would not be accumulating underproduction.

A. That's correct.

Q. Let's move to Exhibit Number 8. Could you identify that?

A. This exhibit, in addition to the last two that we just looked at, represent the input that was put into our economic model. And here you see at the top of the page the drilling costs for each of the wells. And what I have included here also are drilling costs for a single Dakota and a single Mesaverde. I include these because situations can be kind of masked by the dual wells, and so I just add those for clarification purposes.

The average of the dual wells in terms of drilling costs is $769,000.00. Of this amount, approximately 20 percent is for stimulation, approximately 20 percent is for facilities, and the remaining 60 percent is for actual drilling of the well and setting casing.

Shown also here are operating costs. These are direct operating costs, $430.00 per well per month, or in the case of the duals, $215.00 per interval.

HEARING EXAMINER: What exhibit are you on?

MR. CARR: Exhibit Number 8.

HEARING EXAMINER: Go ahead.

A. The last item there on the page is the gas price, and -- that we have used in our forecast. This is a forecast that was derived specifically for the San Juan Basin by our Houston gas department. The initial price is a dollar per million BTU, with some escalation in future years.

Q. (By Mr. Carr) This gas price was not developed just for this hearing; is that right?

A. No, it was developed for our use in our operations.

Q. How does this gas price compare to the current price that you're receiving per MMBTU?

A. Actually, our current price is less than this. It is approximately in the eighty cent-per-million-BTU range.

Q. If we look at the numbers at the top of this exhibit, when you compare the costs associated with a single completion versus the dual completion, basically, what does that tell you?

A. Well, a dual completion benefits because a number of the costs are shared. A single well must carry the entire burden of all drilling costs.

Q. Let's go now to Exhibit Number 9. Would you identify that for Mr. Morrow and then review it, please?

A. This exhibit just gives the economic results of our analysis. Shown here are two columns, one showing standard allowables, the other showing the minimum allowable of 500 MCF a day that we're requesting. I've chosen two parameters here; one, return on investment, which is shown here in percent; and payout, which is shown here in years. You can see that, for example, in the case of the 158M that the economics are substantially affected by standard allowables. And that is the case for each one of the wells that I'm showing here, including the single Dakotas and single Mesaverdes.

Q. Let's go to the well 192. If -- look at this table, the payout on that well, with a minimum allowable would be 2.8 years.

A. Right.

Q. Can you explain that number and how that relates to a request for a four-year allowable period?

A. Yeah. Those are good economics. And we are, of course, wanting to target our best wells in this analysis, but also we want to learn some information. This particular

well will be dually completed in the Dakota as well as in the Gallup.

And the Gallup formation is not prorated, and we currently are producing from only one Gallup well in the unit. And as it turns out, that's our best well in the unit. What we want to try to determine from the drilling of this well is the extent of the Gallup sand that we're producing from, so this is an extension well of sorts. And depending on whether this well comes in comparably to the one well that we do have on our unit, there are three other wells that could be drilled as a result. What I've shown here also is just what the Dakota economics would look like if you just looked the Dakota side.

Q. If we look at the 192E, that well you propose to dually complete in the Dakota and the Gallup?

A. That's right.

Q. And how close is this well to the Gallup -- producing Gallup well that you discussed?

A. Oh, it's about a mile-and-a-half, I believe.

Q. And how long has that other Gallup well been, in fact, producing?

A. Since 1981.

Q. In making these assumptions, have you assumed that the Gallup zone in the 192 is going to perform similar to this other Gallup well that you're producing?

A. Yes, we've assumed comparable results.

Q. If you're wrong on that, what will that do?

A. Well, it will significantly impact the economics, but that's the kind of information that we need to obtain.

Q. With this kind of information then you'll able to determine whether or not to attempt other Gallup dual completions in the pool?

A. That's correct.

Q. Let's go to Exhibit Number 10. Could you review this? And I think there's a typographical error on this one. Would you point that out to Mr. Morrow?

A. The typographical error is under the first section here where it shows the 192M well, and that should be the 192E well.

Q. Could you review your recommendation for Mr. Morrow?

A. What we're requesting is a 500 MCF-a-day allocation to be set for both the Dakota and Mesaverde formations for these three specific wells, the 158M, the 175M and 192E. We're also requesting this allowable be set for a period of four years, which represents our average payout period. We're not requesting this allowable to the full term of the well.

And my last item that I have here is that we want to test this well in accordance with existing deliverability

test rules. We need the information, as does the state; so we want to abide by those rules.

HEARING EXAMINER: What was that last recommendation?

THE WITNESS: Our last recommendation was just to abide by the deliverability testing that's currently required on all wells in the San Juan Basin prorated pools.

Q. (By Mr. Carr) Mr. Hering, if the special allowables are set, do you have an opinion on what impact this will have on UNOCAL's plans to go forward with development of gas in prorated pools in this particular unit in northwest New Mexico?

A. Well, I might mention that we have been proposing wells to our management since 1986 and have yet to success in being able to drill one of these conventional Dakota-Mesaverde wells. What we're trying to do is develop information that is needed for long-term plans. And there's no secret about the capacity problem in the San Juan Basin; however, there is information that suggests that capacity constraint will improve in the near future, and we want to be poised for that situation, having the deliverability available.

Q. If the application is approved, do you anticipate that you will be able to move into a program which will develop conventional gas in the San Juan Basin?

A. Yes.

Q. What impact would approving this application have on correlative rights?

A. These wells, as was shown on Exhibit 1, are all internal to the unit, so we don't believe that correlative rights is an issue in the case of these three wells.

Q. Do you anticipate that approval of this application would have an impact on other operators in the pool who -- or in the basin who rely on the transportation systems to move gas from the basin to market?

A. No. We're talking about a relatively inconsequential amount in regard to the total pool production.

Q. What about waste? What will be the result of approval of this application?

A. Well, we feel that waste is a real concern with the current proration system. And the reason I say that is because of the production curves that I showed you. The curtailed case results in a well life that's much longer than well bores are actually able to sustain. So we feel that waste is minimized when a well is able to produce in a reasonable period of time.

Q. If this application is granted, if I understand it, you're anticipating more development.

A. That's correct.

Q. With more development would come more

deliverability?

A. That's correct.

Q. Would more allowable follow that?

A. That's the trend in allowables.

Q. More allowable you would have more production of conventional gas in the basin?

A. That's correct.

Q. In your opinion, will granting this application result in the production of hydrocarbons that otherwise might not be produced?

A. Yes.

Q. Were Exhibits 1 through 10 prepared by you?

A. Yes.

MR. CARR: At this time, Mr. Morrow, we move the admission of Exhibits 1 through 10.

HEARING EXAMINER: 1 through 10 are admitted.

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

HEARING EXAMINER: Ms. Smith, do you have questions?

MS. SMITH: I think we may. Can I have just a minute with Mr. Lyon?

HEARING EXAMINER: All right. While you're doing that, we'll go on to Mr. Stovall.

EXAMINATION

BY MR. STOVALL:

Q. Turn to Exhibit Number 4, Mr. Hering. I just want a little more of an explanation. Briefly just restate what this says.

A. This is a different plot, I'm sure probably one that you haven't seen before. But this was derived by taking the actual historic F1s and F2s that were published monthly, applying the 500 MCF-a-day D to those F1s and F2s, and then comparing that resulting allocation number to the 500 MCF per day. And so what you see here is a percentage of 500 MCF per day. This changes, depending on what the D is. Exhibit 5 shows how that changes.

Q. Is that the total allocation to a proration unit? Is that what you're saying? Or is it just the percentage of --

A. The F1s and F2s are taken after actual production and nominations have been considered, and so it just then becomes a calculation using F1 and F2 to derive what each proration unit will receive in terms of allowables.

HEARING EXAMINER: Let me ask a question. If you show 50 percent on there, that means it could produce under the allocation of only 250 MCF a day?

THE WITNESS: That's right. And, of course, this is assuming month-by-month balancing.

Q. (By Mr. Stovall) That assumes no -- I mean, that doesn't take the acreage factor into that.

A. This includes acreage factor also.

Q. What data did you use to derive this?

A. This data was taken from the monthly State of New Mexico, San Juan Basin proration schedule.

Q. Now, going on to -- the question is kind of in relation to Exhibit Number 5 -- and you essentially -- what you stated there was -- if I understand you correctly -- was that the higher the deliverability of the well, the lower the percentage of that well capacity was it able to produce under the allowable system.

A. That's right.

Q. What -- I mean, you're a reservoir engineer, right? You understand principles of engineering as to what causes a well to produce better or worse; is that correct?

A. Uh-huh.

Q. I only ask that to make sure I'm asking the right witness the right question. What -- as an engineer, what's the difference? What causes the better wells? What makes the difference between a better well and a not-so-good well?

A. Primarily better reservoir quality.

Q. What are the qualities?

A. Qualities include porosity, permeability, reservoir pressure, bottomhole flowing pressure.

Q. Are you talking in general, or are we talking specifically and particularly, given the nature of the rock

in the Mesaverde and the Dakota?

A. Well, I'm just talking in general for sandstone-type reservoirs.

Q. At the risk of getting myself into some engineering areas that always get me in trouble, if the permeability is high -- I assume that's a fairly significant factor in the deliverability of a well, is it not, the permeability?

A. Yes.

Q. Particularly that combined with the pressure, the ability of the fluid to move through the rock?

A. That's correct.

Q. Presumably, is it safe to say that a higher permeability well is capable of draining a greater distance?

A. It all depends on the thickness of the formation as to what its drainage area will be. And our Dakota formation happens to be a very thick formation, in our area on the average of 90 feet.

Q. Given the comparable thickness, is not a higher permeability well going to drain a larger area?

A. For comparable thickness, yes.

Q. And does that -- I mean, that would indicate to me that what's happening is that the higher well has the greater potential to drain offsetting tracks.

A. Well, I guess I have to refer back to a study

that was done that was the basis for the infill pool rules for the Dakota formation, and that -- the results of that study indicated that an infill well would recover new reserves. And that's the basis for our current pool rules.

Q. I understand that. Generally speaking, if I understand you correctly, the Dakota is a fairly tight sand, relative to a lot of sands in terms of permeability. But, again, talking in terms of -- what you've done is you've stated that the larger well is penalized more. And the inference I make from that is that you think that's inappropriate.

A. Well, the only point I'm trying to make is that with that kind of penalization we cannot drill a commercial well. As to whether that's a correct formula or not, I leave that up to the OCD. But with this sort of system, we -- this is a curtailment for new drilling wells. New drilling wells typically have higher deliverabilities than existing wells.

Q. Let's move on to Exhibit 6 here for just a moment. I need a little bit of an explanation because I'm not sure -- you basically describe the stairstep as being caused -- being the projected pattern because we're now on a six-month allocation factor. I understand how that creates six-month lines, if you will.

Why does that necessarily dictate that they will

be in an up-down pattern such as this? What caused you to make those assumptions, that it would drop and rise every six months, the allowable?

A. Well, it's just based on the average F1s and F2s and the resulting allowables for the comparable period last year. And we typically see lower allocations through the summer and higher through the winter. Winter months is when demand is the highest.

Q. Under the old -- again, I'm going to now assume that you are familiar with the proration system. I know you've been involved in it, so you have some familiarity with how it's worked mechanically.

A. Yes.

Q. Under the old system, the allowables, were they not largely set by really almost a mathematical formula, taking prior production and multiplying it by a number and reallocating amongst non-marginal wells? Pretty much a mathematical basis?

A. That's the new system. The old system was based on pipeline nominations. The new system is based on actual production.

Q. Let's take -- there was a time when it was pipeline nominations; that was the allowable system. And that got thrown out about 1985, as a practical matter, although nominations were still taken. From that time until

the new rules were adopted -- which started April 1st of this year, I believe, if I'm not mistaken -- allocation where allowables were supposedly set on a demand-based system, because pipelines weren't nominating because they weren't the purchasers. Do you understand what I'm saying there?

A. Yes.

Q. Do you disagree so far with that broad, general statement, which doesn't contain any details?

A. No.

Q. The next part of that, taking it down to a higher level of detail, this system -- the way the system worked essentially -- and I'm going to summarize it -- just point out any gross errors in it -- was that production from a prior -- from the nearest reported prior month, which is essentially two months before the allowable has been set -- was multiplied times a monthly allocation factor?

A. Seasonal adjustment factor.

Q. To determine the pool allowable, which was then allocated to the proration units within the pool?

A. Well, there's an intermediate step there there's called the administrative adjustment factor, and that can also be inserted by the OCD at their discretion.

Q. I understand. It's not strictly that way. Now that we're on a six-month system -- you participated in the

first hearing we had under the six-month system; is that correct?

A. Paul West did; he participated in that hearing.

Q. And the way that system works is -- again, I'm stating my understanding of it and asking you if you agree because I think it affects how useful this exhibit is -- any interested party, purchasers, transporters, producers, marketers, are invited to come and provide input to allow the division or the commission to set allowables for the following six-month proration period, correct?

A. That's correct.

Q. And so the mathematical formula that has been used over the past four or five years, subject to administrative adjustment, is essentially minimized in terms of its significance in -- or is reduced -- I won't say "minimized." Reduced?

A. Actually, the same calculations are used in the determination. It's just that now the F1s and F2s are fixed for a six-month period, so it's added some predictability to the system. But by the same token, it's locked us into a fixed allocation.

Q. But is it necessarily with the opportunity to have some more meaningful input to the system? Is it reasonable, do you think, to look to history to predict this pattern? And I'm as much talking about the range of it as

the pattern of the allowables.

A. Yeah, it's reasonable to look at the historical perspective. However, again we see the current proration system as a curtailment and one that is difficult for us to justify new drilling wells with.

Q. I understand that problem. I guess I'm just trying to determine the usefulness of this exhibit. I see it as being based upon some historical assumptions which may not necessarily be as valid any more because the system has radically changed, and we don't have any history based upon the new approach to proration allocations. I assume you don't agree with that.

A. Well, I think what's going into the new six-month allowables is based on the history. I think the exhibit that came out in advance of the six-month allocation hearing had historical numbers included in it, and that was the basis for determining these F1 and F2 numbers.

Q. You're talking about the preliminary numbers that the commissioner presented as a starting point for the commission hearings.

A. That's correct. What was finally accepted was very close to those original numbers.

Q. On Number 8, your economic input and assumptions, your dollar per MMBTU, is that your well head net back price?

A. Yes.

Q. Number 9, when you're calculating your economic results under the standard allowable system, what allowable did you use? How did you do that? Can I go back to one of the other exhibits and find that?

A. Yes. You can go back to Exhibits 6 and 7 to see what the average allowables were for the curtailed case.

Q. Those are the numbers that you plugged into the system to calculate that?

A. Yes.

Q. Talking about -- you made the statement, I believe, that as far as transportation of the gas, that these three wells weren't going to make any significant difference in the capacity, in the pipeline capacity, the removal capacity in the area of the Rincon Unit; is that correct?

A. That's correct.

Q. Would you describe the transportation systems that exist in that general area? Specifically, for the Rincon and for competing properties outside the unit, how do you get gas out of there?

A. The gathering system is owned by El Paso Natural Gas Company. That gathering system services many other wells in and around the Rincon Unit. That well is -- that gas is then compressed at the Largo pump station, in a case

of low pressure gas, and then sent to the Chaco plant or the Blanco plant. The high pressure gas bypasses the compressor station and goes to either of those two processing plants.

Q. Is that -- do you know if that gathering system is operating at or near capacity? Or how much space is available in that system, how much additional gas to be moved through the existing gathering system?

A. A lot of it depends on the compression that El Paso chooses to supply at the Largo pump station, but -- I cannot give you an accurate number. I can say that line pressures have increased.

Q. And where I'm going with -- the next part I'm concerned about is UNOCAL is asking for some special treatment on some specific wells, and other operators may ask for the same thing. If we started to raise allowables to some -- let's say the 500 minimum D in the pool, what -- would they reach a constraint problem on the gathering system in this area?

A. Under current conditions, yes. As I mentioned before, there's no secret that there is constraint, just with the gases flowing right now.

Q. How would your proposal affect that, when you look at it in terms of the larger scale situation? At what point do we reach a system constraint rather than a regulatory constraint on the production?

A. Well, I can't speak to that in terms of actual volumes. I will say though that there is a real disparity between how prorated gas is being handled versus non-prorated gas. And there is some -- what I believe to be unfair competition just in that area.

Q. In what sense?

A. Just in the sense that prorated pools are curtailed.

Q. Are you saying that you think -- are the prorated pools curtailed because they don't have access to the system and that's causing the allowables to be artificially lowered below what really they could be marketed and sold?

A. If we get back to the allocation calculation, it's based on actual production. As production goes down in the pool, subsequent allocations also decline.

Q. Is that being caused by transportation system constraints as much as declines in deliverability, you think?

A. Probably more by constraints, by pipeline constraints.

Q. In other words, as the pipeline constraints -- I'm trying to make sure I understand you correctly -- pipeline constraints may reduce takes from all the pools, but the impact on the prorated pools is that the reduction in takes results in a reduction in allowables, and you get

the so-called downward spiral?

A. That's correct.

Q. Is granting special allowables to individual wells within the prorated pool looking on the big picture scope? Is that a reasonable way to resolve that?

A. It allows us to develop a resource and a reserve that would otherwise not be developed.

Q. I understand your desires to have some assurance that at least the regulatory system will allow you to produce enough gas from a new well that you can compete for pipeline space and market with that well; is that correct? Is that a correct statement? In other words, if we give you 500-MCF-a-day deliverability, that doesn't guarantee that you will be able to sell that 500 MCF a day.

A. That's correct, but our experience has been that we can sell what we produce.

Q. And I guess my question would be: Is your objective being to have some assurance that the regulatory system, the proration system, will allow you to produce enough gas over a long enough period of time that you can economically justify drilling these infill wells? Is granting special allowables to specific wells the most reasonable way to accomplish that, or have you considered other alternatives as ways to accomplish that same end?

A. Well, I had mentioned earlier that what we're

trying to do here is establish information that will help us in full scale development. Allocation represents a variable. Gas price represents a variable. When the risk is too high, management will not accept it and will not opt to drill the well. And, in our estimation, if we can remove the variability of the allocation, then that will assist us in determining the overall commercialability of the formation in the Rincon Unit.

Q. Basically, your assumption, your graphs, are assuming a declining -- general declining trend in the allowable for the pools, based upon a number of different factors; deliverability, pipeline access, the downward spiral we've talked about, that sort of thing; is that correct?

A. Right.

Q. I guess what I'm asking you is: Given the fact that the granting a special situation could create a problem in terms of regulatory management of the reservoir, and given the fact that the -- assuming the division is not adverse to wanting to create conditions which would make a drilling program economically viable, is the specific application you filed the most reasonable way to accomplish that end, or have you considered other alternatives?

A. Well, there are other alternatives. I think this is one that could work well with the OCD. It's a temporary

situation. We're only talking about these allowables through the payout period. And after that period in time, then we'd revert back to the old system. I think the OCD is accustomed to working with special problems, and I cite specifically the two moratoriums that have been issued since I've been working in New Mexico.

Q. Were those not applied on a basin-wide basis?

A. Yes, but they kind of overrode the allocation system.

Q. But I guess the distinction there is they applied equally to all operators. They were not operator-special wells, specific situations.

A. That's true.

Q. Have you considered a situation such as a unit allowable for the Rincon Unit, which would be some way which -- would that give you more flexibility in terms of development within the unit?

A. Yes, but it does not fit with the current allocation system that allocates on the basis of proration units and individual well deliverabilities.

Q. Could it not be backed into from, say, going to proration unit, then putting the individual proration units within the system together and creating the unit, the back-in calculation method?

A. That's a viable option.

Q. Just speaking for your company -- I know you're not the ultimate decision-maker on taking risks -- but from a field engineering standpoint, would that put you in a situation where you could make a more comfortable recommendation to management, or would you feel more comfortable with the ability to manage the unit and make development economic?

A. I would really have to put a pencil to paper, but I will agree that it is a viable option.

MR. STOVALL: I think Sarah's ready now. I have no further questions.

HEARING EXAMINER: Go ahead.

MS. SMITH: Mr. Hearing Examiner, we have no substantive questions for this witness, but one that's simply out of curiosity: What do the letters stand for following the unit wells, 175M, 158M, 192E? Is there some significance to those letters?

THE WITNESS: The M designation is OCD's method of identifying a dual completion in two prorated pools, the two prorated pools being the Basin Dakota and the Blanco-Mesaverde. The deepest horizon, if there is a well penetrating, that sets the well number. The E designation is designation for infill Dakota wells, and A designation infill Mesaverde wells.

MS. SMITH: Thank you for the explanation.

HEARING EXAMINER: Is that all? Mr. Carr, do you have anything further?

MR. CARR: Just a couple, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Hering, in response to questions by Mr. Stovall you stated you were assuming a decline in the allowable; is that correct?

A. Actually, the numbers that went into the economics assumed fixed F1s and F2s. As deliverability declines, allocation declines.

Q. If, in fact, we have something that we haven't seen historically and we see increasing allowables, wouldn't that, in fact, make the minimum request you're making here today, or the request for minimum allowables that you're making here today of little consequence?

A. Absolutely correct.

Q. You talked about moratoriums, and it was pointed out that they applied equally to all operators in the basin; isn't that correct?

A. That's right.

Q. Does proration apply equally to all operators in the basin?

A. No, it doesn't.

Q. If you were able to acquire information from

these three wells that you're proposing to drill if this application is granted, and if you use that information and it justified additional development, at that time would the unit allowable be a possibility and a next step to take in trying to determine how to efficiently produce these reserves?

A. It would probably be the wiser approach.

MR. CARR: That's all I have.

HEARING EXAMINER: Mr. Hering, I have a few questions. The four years, or 500 MCF per day, where was that stated in your request, or did you just state it today for the first time?

THE WITNESS: If I refer to Exhibit 10, here we're stating the 500 MCF a day in the four-year payout period. Is that what you're asking?

HEARING EXAMINER: I'm asking is this a request for a four-year period? Is that what UNOCAL's request is for?

THE WITNESS: Yes.

HEARING EXAMINER: Will the other 84 wells you had planned, if things turn out as you hope they will, will they need some allowable incentive also? Would you request 500 MCF per day for those wells, for the ones that are prorated?

THE WITNESS: Not all of those wells are prorated. I'd have to say that it would be an unfair assumption for me to say that we're going to need help on all of those wells.

There's a lot of change in the system, and capacity itself is changing. As Bill brought up, as capacity increases, deliverability increases, allocation will increase; and so that we may not need the assistance in the future is what I'm saying.

HEARING EXAMINER: You may need it on at least 60 or so of those 84?

THE WITNESS: Well, if we drilled them all today, we would need that sort of assistance. We're not asking for that today.

HEARING EXAMINER: I don't think you answered exactly how long it would be before you'd get those other wells drilled. Do you have an approximate answer for that?

THE WITNESS: We have looked at a number of different scenarios. We've looked at -- probably the most reasonable scenario would be a 12-year development program. But that could change, depending on the results of these wells.

HEARING EXAMINER: Have other operators drilled any Basin Dakota or Blanco-Mesaverde wells since 1981? That's the date you said --

THE WITNESS: Yes.

HEARING EXAMINER: They have?

THE WITNESS: Yes.

HEARING EXAMINER: Do you know how many?

THE WITNESS: I don't know how many wells have been

drilled since 1981. Operators to the south of us have drilled Dakota wells, and those have proven to be commercial.

HEARING EXAMINER: Are your wells in these two pools producing at their allowable rates now or more than their allowable rates?

THE WITNESS: Let me answer that by saying that we manage our allowables. The reason that we manage it then is in order to take advantage of higher prices that we typically see during winter months. So, typically, during the summer we will underproduce in order to accumulate allowable; and, typically, during the winter we will overproduce in order to take advantage of those higher gas prices.

HEARING EXAMINER: What's the situation right now, are you in the winter or summer mode?

THE WITNESS: We're in the summer mode.

HEARING EXAMINER: You're not producing at your allowable rate now; is that correct?

THE WITNESS: We're producing at something under allowable, I believe, at this point.

HEARING EXAMINER: Are any of your wells overproduced to the extent of 12 times their January allowable?

THE WITNESS: No.

HEARING EXAMINER: None are?

THE WITNESS: None, to my knowledge.

HEARING EXAMINER: Exhibit 5, Mr. Stovall asked you some questions about that, but that's the exhibit that shows that the smaller your deliverability is, the more of it that you can expect to produce under the allowable system. Is this just a picture of the allocation formula for the pools? I thought that's probably what it is.

THE WITNESS: That's all it is.

HEARING EXAMINER: It's what written down as allocation formula, and this describes it.

THE WITNESS: That's correct.

HEARING EXAMINER: Do you think that should be changed, or is it fair and equitable?

THE WITNESS: Tough question. We're dealing here with a reservoir that's very tight but that has been produced for quite a number of years, and so allocating in order to protect correlative rights and prevent waste seems like a moot issue at this point.

HEARING EXAMINER: This formula, it does put some restraint on the low deliverability wells, does it not?

THE WITNESS: Yes.

HEARING EXAMINER: If it were not for the deliverability portion of the allocation formula, there would be none.

THE WITNESS: That's correct.

HEARING EXAMINER: If the allocation formula were acreage, they could produce probably at 100 percent of their deliverability.

THE WITNESS: That's correct.

HEARING EXAMINER: Would you recommend that that 500 MCF per day be extended to other wells if applications were received here at OCD?

THE WITNESS: I would say that would have to depend on drilling costs and what internal corporate economics demanded. It would also depend on the formation that was being considered.

HEARING EXAMINER: You think there would be a domino effect, that we would get applications from other operators who would also like to drill wells and get data and see about their situation?

THE WITNESS: Honestly, I don't know. It's seems like most of the activity in the basin right now is for coal wells.

HEARING EXAMINER: Do you think your management -- in the event this application is not approved, do you think they'll drill the 192E?

THE WITNESS: Yes.

HEARING EXAMINER: Do you have other wells in the -- other opportunities within the Rincon Unit which would be as good as the 192E?

THE WITNESS: No.

HEARING EXAMINER: That's the only one.

THE WITNESS: Well, if the 192E proves advantageous, then there are, as I mentioned earlier, three other similar wells.

HEARING EXAMINER: Three other similar to that one.

THE WITNESS: Yes, sir.

HEARING EXAMINER: That would have a good payout even with the current restraints?

THE WITNESS: That's correct.

HEARING EXAMINER: On Exhibit 6, compared to Exhibit 7, there was a growth of the summer allowables on Exhibit 6 and a decline on Exhibit 7. What's the difference there?

THE WITNESS: Well, I'm not sure that I can answer that, other than to say that we're looking at a logarithmic scale here and it may be possible that that's causing some distortion.

HEARING EXAMINER: Well, it might be. There's one going up and one going down, I believe, even on the log scale. I thought maybe you were anticipating the need for additional allowable would be there when I looked at 6, but then on 7 it declined, maybe because of deliverability, was my guess.

THE WITNESS: It probably has something to do with the amount of deliverability that the original well has, and as

that deliverability declines, it achieves a higher and higher allowable.

HEARING EXAMINER: All right.

MR. STOVALL: Mr. Examiner, with your permission, I would like to ask a couple of more questions.

HEARING EXAMINER: All right.

RECROSS-EXAMINATION

BY MR. STOVALL.

Q. You indicated in response to the Examiner that -- in whether other similar applications should be granted, that that was largely based on internal corporate economics. Do you believe the commission should consider specific company economics in dealing with these types of applications?

A. Well, I think the commission should consider what's reasonable in terms of drilling economics and in terms of production forecasts.

Q. When you talk about internal, you indicated there's differences between companies and how they consider those economics in making their internal decisions.

A. That's correct.

Q. Again, I'm inferring -- and please correct me if I'm wrong -- that you are saying that should similar applications come from other companies, one of the factors the division should consider should be that company's

internal, company-specific economics?

A. That's a very difficult proposition for the OCD.

Q. Absolutely; that's why I'm raising the question since you had suggested that.

A. However, again, I think that there is a requirement on the part of the OCD to establish the reasonableness and to consider the fact that different companies will have different situations, the fact that we in our own company have competing projects in our own region.

Q. I guess I'm hoping I'm not hearing you suggest that we should consider your internal situation.

A. No.

Q. Then we'd have to consider each company's.

A. That's correct.

Q. If we're going to do something, we need something that we can apply in some uniform way to companies. For example, would you consider that a recommendation could be made in some way -- not necessarily at this hearing -- for a procedure to approve some sort of minimum allowable administratively for new wells, infill wells, in either of these pools?

A. That's a viable option.

Q. One other question, just to shift gears slightly. Mr. Morrow talked something about the formula.

Given a statement that the current allowable formula as used in these pools, the mathematics of the F1-F2 factors and the A and A-D and all that is not cast in stone and conceivably could be changed -- say, what happened if we increased with significance the percentage attributable to deliverability? Would that serve to raise allowables in the pool, would you think? Would that help this situation?

HEARING EXAMINER: Have to go the other way, I believe.

Q. (By Mr. Stovall) Let me rephrase the question then to get the right answer. Could adjusting the ratio between deliverability and acreage deliverability factors be done to provide an incentive to new, higher-capacity wells?

A. Yes. And I think if you'll look at Exhibit Number 5 you'll see it's more advantageous to drill a Mesaverde well than a Mesaverde-Dakota well primary because of the way that the factors are weighed.

Q. Again, considering alternatives, that might be another approach to come up with something that was more universally applicable and not well specific to a particular company.

A. That could be an approach. However, you still have the situation of a good well being penalized and allocation, in effect, acting as curtailment. But, yes, there could be a better way of reallocating F1 and F2 number.

Q. I think, by definition, that good well is going to be penalized under any proration system. They're the ones that are going to have the lower percentage of capacity in the system.

A. Yes.

MR. STOVALL: I have no further questions now.

HEARING EXAMINER: Let's see, Mr. Carr, you're probably working up another question.

MR. CARR: Actually, Mr. Morrow, I'm not.

HEARING EXAMINER: All right. Mr. Hering, thank you. You may be excused.

MR. CARR: Mr. Morrow, I might able to call Paul West for just some brief comments that follow on a couple of questions that were asked of Mr. Hering that will be very brief.

HEARING EXAMINER: All right. Would the witness stand and be sworn?

(Witness sworn.)

PAUL WEST

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. Paul West.

Q. Where do you reside?

A. Farmington, New Mexico.

Q. By whom are you employed and in what capacity?

A. Union Oil California, d/b/a UNOCAL, district production manager.

Q. Are you a petroleum engineer by trade?

A. By trade, civil engineer.

Q. Have you previously testified before the New Mexico Oil Conservation Division?

A. Yes, I have.

Q. Have your credentials as an engineer been accepted and made a matter of record?

A. Yes, they were.

MR. CARR: Are the witness' qualifications acceptable?

HEARING EXAMINER: Yes.

Q. (By Mr. Carr) Are you familiar with the application filed in this case on behalf of UNOCAL?

A. Yes, I am.

Q. You've been present for the testimony here today?

A. Yes, I have.

Q. Could you summarize for Mr. Morrow UNOCAL's position when it comes to the question of granting similar relief to other operators in the San Juan Basin should those applications be filed?

A. I'd say that we have no objection to seeing those

minimum allowables granted to anyone who would drill a new well to receive them, and emphasizing that we are talking about new wells. And it could be on a case-by-case basis all right, but Mr. Hering spoke to the internal economics. As long as the economic is the reason for drilling those wells and getting new allowables and economic consideration, we don't think that any of them ought to be denied that. And we don't see any significant impact on capacities due to that because we're talking about a just a drop in the bucket for the kinds of new well drilling that's going on in the prorated pools and compared to what's going on in non-prorated pools.

Q. You mean the new drilling going on in the non-prorated pools as compared to the prorated?

A. Excuse me, that's correct.

Q. Do you have anything further you'd like to state?

A. No.

MR. CARR: I'd pass the witness for cross-examination.

MS. SMITH: No questions, Mr. Hearing Examiner.

MR. STOVALL: I have just a quick one on that.

EXAMINATION

BY MR. STOVALL:

Q. You talked about you would not oppose, say, similar minimum allowable for other proration units with new wells. What about reworking workovers, recompletions, that

sort of thing, work done to an existing well to stimulate the production?

A. I would not differentiate between workovers or drilling. As long as we're talking about developing new gas that cannot be developed due to economics, then I think that that's a -- I would hope that that's what the minimum allowable option that the OCD has could be used for, is to assure that the new gas could be developed, whether it would be through a new well or an old well.

Q. Now I have a loaded question. Having heard all the discussion I had with Mr. Hering considering different options, what is your opinion about whether this is the best or most reasonable option from a regulatory management standpoint to provide an incentive for development and expenditures in these two pools?

A. I think that it is the most reasonable because I feel it's the least objectionable to other parties. We would love to see a unit allowable or a minimum allowable that could be spread among all existing and new wells, but it -- in our discussions with OCD and legal counsel, we're trying to go with something that we feel that would not be objectionable to anyone in this request here.

Q. Are you saying it's not objectionable because these specific wells are in the interior of a unit; therefore, it's not a correlative rights issue?

A. In the interior of the unit there's only three of them, and the impact on pool water basin-wide for the additional gas we will produce as a result of being granted this allowable is totally insignificant.

Q. How would the division use it in order to provide incentives for other operators to increase development?

A. If operators could achieve the minimum allowable on drilling new wells, it would be an incentive because it would increase anyone's economic scenario.

Q. In other words, give it to anybody that wants to drill a new well?

A. That's right, an incentive for drilling a new well.

MR. STOVALL: No further questions.

HEARING EXAMINER: Mr. West, do you agree that your 192E doesn't fit the criteria that you've set out as the basis for the division approving these applications, or do you think it does meet those criteria?

THE WITNESS: I think that it would provide an enhancement. As far as whether it would prevent -- if not granting the request would prevent that gas from being developed, then I would say, no, it probably wouldn't prevent that gas from being developed on the four wells that we potentially have that are in that --

HEARING EXAMINER: 192E plus those other three?

THE WITNESS: Right. It would provide us an incentive if we could get the allowable on the minimum level on any prorated zone.

HEARING EXAMINER: Anything further?

MR. CARR: Nothing further.

HEARING EXAMINER: Thank you, Mr. West. You may be excused.

Ms. Smith.

MS. SMITH: Thank you, Mr. Hearing Examiner.

MS. SMITH: Ms. Bolton is distributing exhibits.

May it please the Hearing Examiner.

HEARING EXAMINER: YES.

MS. SMITH: I first want on apologize to Mr. Carr if he did not receive our prehearing statement.

MR. CARR: I did receive a prehearing statement from the gas company. I did not from the Oil Conservation Division. Had I known that you were entering an appearance, you would have received mine

VICTOR T. LYON

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

DIRECT EXAMINATION

BY MS. SMITH:

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

A. Victor T. Lyon, L-y-o-n.

Q. Where do you reside, Mr. Lyon?

A. I live in Santa Fe.

Q. What is your occupation?

A. I'm a consulting petroleum engineer.

Q. And your previous occupation?

A. Well, I spent 39 years with Conoco and four-and-a-half years with the OCD as chief engineer and as a consulting engineer.

Q. Have you had previous occasions to testify before the division and were your credentials at that time sufficient to qualify you as an expert in the field of petroleum engineering?

A. Yes, I have.

Q. Have you had occasion to familiarize yourself with UNOCAL's application in this proceeding?

A. Yes.

Q. Have you had occasion to review and familiarize yourself with the deliverability data on wells in the vicinity of the ones referenced in UNOCAL's application?

A. I have made a study of the deliverabilities in the immediate area of these three wells.

Q. Are you familiar with the factors in the appropriate proration schedules?

A. Yes, I am.

Q. Have you been present for the testimony presented

here today?

A. Yes.

MS. SMITH: Mr. Hearing Examiner, I would like to tender the testimony of Mr. Lyon as that of an expert in the field of petroleum engineering.

HEARING EXAMINER: We accept Mr. Lyon's qualifications.

Q. (By Ms. Smith) Mr. Lyon, can you tell us the reason for your testimony in this matter today?

A. Well, when I saw the published advertisement of the case, I was concerned and consulted with Gas Company. And Gas Company also seemed to be concerned about the style of the case and because the case, as described, is a very sharp departure from established procedures that have been used by the OCD since gas proration began in 1953.

Q. I'd like to direct your attention to Gas Company's Exhibits numbered 1 and 2. Do you have copies of those with you?

A. Yes, I do.

Q. Directing your attention to Gas Company Exhibit Number 1, can you identify this document?

A. Well, Exhibit 1 is just a grid showing the method I used in studying the deliverabilities involved. The center rectangle in there with an X represents the quarter section on which the well is proposed to be drilled. And I have indicated an inner ring and an outer ring and

designated them by a letter. Starting with the northeast offset to the proposed location, that quarter section is designated A, and then moving westerly to B and C, and then southerly to D and E, and easterly to F and G, and northerly to H, completing the rectangle surrounding the proposed location. These eight rectangles are designated the inner ring and then the outer ring. Starting again at the northeast corner with the I, and proceeding counterclockwise again through J, K and through to X, indicates the quarter sections which I tabulated data if there was data available.

Q. Thank you. I'd like to direct your attention now to Gas Company's Exhibit Number 2 and ask if you can identify that document.

A. Well, Exhibit Number 2 is the results of that calculation for the -- dealing first with the Dakota and the well in section 22, the inner ring had a high deliverability of 252 and a low deliverability of 159 and an average deliverability of 198. Under the current proration factors, on a 320-acre unit, such a well would receive an allowable of 5,505, which is a little over a third of what they, UNOCAL, is requesting.

On a 160-acre unit, it would receive only half of that, 2,753. And if it had no acreage at all, it would have zero. Now, I mention this because the case as advertised, as well as the application and the amended application,

mentioned a special allowable for a well. In New Mexico there has never, to my knowledge, been an allowable given to a well. An allowable is given to a gas proration unit with one or more wells located on it.

Q. Mr. Lyon, you've made similar calculations for each of the wells --

A. Yes.

Q. -- in the application. I notice that there is no summary information on the well in Section 1 for the Dakota pool listed on your exhibit.

A. Yes, that's true.

Q. Why is that?

A. Well, at the time I prepared this exhibit the data that I had on Section 1 was a little bit in doubt as to accuracy and, therefore, I did not put any data on the exhibit.

Q. Do you have that data now?

A. I have since gathered the data. And the well in Section 1 for the Dakota, the inner ring has a high of 342, a low of seven, an average of 177, and the -- would have -- would receive an allowable of 5,376 for a 320-acre proration unit, 2,688 for a 160-acre proration unit and zero for no acreage. The outer ring had a high of 446, a low of 122, an average of 252, which would earn an allowable of 5,834 for a 320-acre unit and 2,917 for a 160-acre unit.

Q. Just for clarification, you present no data on the Gallup pool since it's not a prorated pool?

A. Correct, I did not have data for it.

Q. Your last printed entry on your exhibit refers to deliverability needed to earn 500 MCF per day. Can you explain that entry?

A. Yes. The -- using the factors which are currently in use, my calculations indicated that for a Dakota well to earn an allowable of 500 MCF a day, it would need a deliverability of 1,752 for a 320-acre unit or 4,208 for a 160-acre unit.

As to the Mesaverde, it would take a deliverability of 1,022 for a 320-acre unit and 2,281 for a 160-acre unit. And the purpose of this statement is to illustrate the amount of bonus that UNOCAL is asking for for these wells that they propose to drill.

Q. Then can you summarize your conclusions from your review of deliverabilities and this summary of expected allowables?

A. Well, I think that -- in the first place, let me observe that UNOCAL's record of drilling since 1982 in the Rincon Unit in these two prorated pools is very little different from anybody else's record of drilling in those two pools. Now, I think that UNOCAL's economics are a little different from anybody else's economics in drilling

in these two pools.

I'm very concerned as far as the stability of proration, the stability of the system, that special allowables be considered in such a situation. I think that if incentive is needed, there is a right way to go about it, and there's a wrong way. And the way that UNOCAL has chosen is the wrong way. I think that every operator in the pool probably needs incentives just as much as UNOCAL does and that any solution to this should be done on a pool-wide basis.

Q. Mr. Lyon, was there anything else that you wanted to comment on on either your Exhibits 1 or 2?

A. I don't believe so.

Q. And were these exhibits either prepared by you or at your direction?

A. Let me make one observation.

Q. Okay.

A. The -- two observations. The allowables that I've calculated here are based on the F1 and F2 factors which are in place for the summer months. Of course, the factors have not been established for the winter months. It -- one could look at the average of the factors that were used last winter and come up with different factors. The allowables here would be higher because the F1-F2 factors are higher for the winter months than they are here.

I'd also like to observe that the rules that we now have provide that a non-marginal well can become overproduced to up to 12 times its January allowable. And this gives the operator a great deal of flexibility early in the life of a well to do whatever testing is needed to be done. And in my view, there really is no justification for the relief that UNOCAL has sought.

Q. Again, I'll ask you, were the Exhibits 1 and 2 either prepared by you or at your direction?

A. Yes, they were.

MS. SMITH: At this time, Mr. Hearing Examiner, I'd like to move the admission of Exhibits 1 and 2.

HEARING EXAMINER: Exhibits 1 and 2 are admitted.

MS. SMITH: Thank you.

Q. (By Ms. Smith) Mr. Lyon, can you please tell the Hearing Examiner how UNOCAL's application will affect correlative rights?

A. Well, I think that there's no way that granting the application can do anything but impair correlative rights. Now, if you look at the statute and the legislature's directives to the OCD in establishing allowables, the allowables are to be assigned in as nearly as it's possible to do so in proportion to the reserves in place in each pool as compared to the reserves in the entire pool. In other words, it should be assigned as nearly as

possible to the reserves in place under the tracts in the pool.

And particularly in the Basin Dakota pool -- well, let me preface that by saying that these formulas were proposed by a committee that was formed, I think, in 1954 to develop rules for the pools in the San Juan Basin. And that committee came up with a formula of 25 percent acreage, 75 percent acreage times deliverability. In the Dakota pool, some years after proration began, and after the Jalmat decision in the Continental Oil case, Consolidated Oil and Gas brought an application to the OCD and asked that the formula be changed.

And under the guidelines established in the legal opinion in the Continental case, it was necessary to completely evaluate the reserves under each tract. And Consolidated made a showing that the formula, 60 percent acreage, 40 percent acreage times deliverability was superior to the 25 percent-75 percent formula. Now, assuming that the allowable assigned -- and, here again, the OCD is required to provide the opportunity for people to produce their fair and equitable share of gas in the pool. Whether they do it or not is up to the operator, but the allowable represents their opportunity to produce their fair share.

Now, if you move away from the allowable, the

allowable formula, then by a reasonable analysis you're moving away from equity because the formula represents equity. And should this case be -- should this application be granted, then you've established a precedent in there which could result in many, many applications for similar relief and a further movement away from equity in the pool. And I think it would be a very undesirable situation to establish such a precedent.

Q. Mr. Lyon, how won't UNOCAL's application prevent waste?

A. I don't see that waste is involved.

Q. Mr. Lyon, does this complete your testimony in this matter?

A. I believe so, yes.

MS. SMITH: Thank you.

Mr. Hearing Examiner, we'll pass the witness.

HEARING EXAMINER: Mr. Carr.

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Lyon, if I understand your testimony, you first became aware of this case when you read about it in the newspaper?

A. No, I received a copy of the docket.

Q. And then I believe you testified at that time you contacted Gas Company of New Mexico?

A. Yes.

Q. Do you have any sort of formal relationship with Gas Company of New Mexico?

A. Yes.

Q. Are you retained by them, in fact, to monitor dockets and report to them when matters that may affect their interests are coming up before the commission?

A. Yes.

Q. Now, when you looked at this, you obviously concluded that this had an impact on the interest of a gas company in Suntero; is that correct?

A. I concluded that there was a good possibility that there may be.

Q. Do they produce any wells in the San Juan Basin?

A. I don't know.

Q. Do you know --

A. I don't think they do.

Q. Do you know if they produce any wells in the Rincon Unit?

A. I'm sure they don't.

Q. Do they operate any wells in the basin that you're aware of?

A. No.

Q. Do they own any mineral interests?

A. I don't know.

Q. Do they have any correlative rights or any mineral interests that this commission is directed by statute to protect?

A. I think they represent a lot of parties who do.

Q. And what is that relationship? What kind of relationship does Gas Company have with other parties?

A. Well, it is becoming less and less so, but in years past pipeline companies were a close ally to the OCD in managing the taking of gas to keep wells in balance, to prevent wells from being reclassified to marginal and to make sure that they were not overproduced excessively. And Gas Company is one of the few transporters still remaining that essentially purchases the gas that they take.

Q. So, in essence, what they're here for is watching out for the correlative rights of some other undefined group of people.

A. I don't think that is a fair characterization, Mr. Carr.

Q. My question is whose correlative rights are you interested in protecting here?

A. I think that Gas Company is interested in maintaining the integrity of the rules of the OCD.

Q. Now, you recognize that this application is not asking for the rules to be changed, but an exception to those rules.

A. That's right, but every exception that's given to a rule weakens that rule to a considerable extent.

Q. And while you were with the OCD, you administered the proration system, did you not?

A. Yes, I did.

Q. And those rules have been changed from time to time; isn't that correct?

A. That's true.

Q. In fact, while you were here the rules were changed, were they not?

A. That's true; I chaired the committee.

Q. And they were changed because of new circumstances in the gas market; isn't that right?

A. Not necessarily new circumstances; I think a better understanding of the circumstances that we found ourselves in after FERC dismembered the natural gas industry.

Q. And the pipelines were no longer in a position to nominate. That would be one circumstance, would it not?

A. They were less a purchaser and more merely a transporter, so they really did not have that much of a feel for market demand, which proration is based on.

Q. That was a change in circumstances, wasn't it?

A. Yes.

Q. So that caused some changes in the rules.

A. Yes.

Q. And the circumstances continue to change. We have to continually evaluate the rules to see if they meet their stated purposes.

A. Yes, that's true.

Q. And you've heard some alternatives proposed here today, a unit allowable. Do you have an opinion on that?

A. I certainly do.

Q. What would that be?

A. That's another serious departure from the system of the OCD, and I think that it would need to be evaluated very closely before you entered into such a thing.

Q. Is that your opinion, or is that the Gas Company's, or are they the same?

A. That's my opinion.

Q. Now, when we talk about --

A. I expressed that when I was chief engineer.

Q. But you're not speaking for the Gas Company necessarily when you say that.

A. No.

Q. When we hear alternatives about changing the ratio between deliverability and acreage in these formulas, do you have an opinion whether or not that would be advisable?

A. I don't know of anybody who's got enough time to

prepare the data that could support it.

Q. And that would probably be an impossible alternative then, is what you're saying.

A. Yes.

Q. If I look at your exhibits and look at Exhibit Number 2, you title this "Expected Allowables" at the top. Is that for proration units or individual wells?

A. That's based on proration units.

Q. Now, on each of the wells that are involved here today, you haven't taken into account the allowable that would be produced by an existing or parent well on that unit, have you?

A. I did not evaluate that because the application just spoke of an allowable to a well.

Q. So you prepared an exhibit that talks about allowables for proration units?

A. Yes, plus the last column there on the right-hand column that says a well that doesn't have a proration unit would not receive any allowable.

Q. Still, we're talking -- aside from that, a well without a proration unit gets no allowable? Is that what you said?

A. That's what our system --

Q. Do you know of many wells with no proration units?

A. No, I don't. But you didn't mention a proration unit in your application.

Q. Your exhibit talks in terms of proration units; that's all I'm asking you.

A. That's right.

Q. You didn't take into account parent wells.

A. That's correct.

Q. Did you take into account in any way the fact that we're not asking for allowable to be accumulated?

A. I did not have any information as to what the gas proration unit consisted of.

Q. Now, as I understand, you are very concerned about the prorating system.

A. Yes.

Q. And if I understood your testimony, you're concerned because the prorationing system is designed to protect correlative rights, and that is, give everyone their share and not give someone more than their share.

A. Right.

Q. When you look at the prorationing system, the statute talks just in terms of proration by pools.

A. Right.

Q. Do you have any concern about allowing people their fair share between pools or just because that's outside the statute?

A. Well, the statute does mention that. And I think that it says that as far as is practical to do so, they should avoid any discrimination between -- any excessive discrimination between pools.

Q. When we talk about that, do you see any problem developing in a situation where you have substantial development going on in non-prorated pools like the Fruitland Coal & Gas that are non-prorated where there was some deliverability and at the same time allowables which restrict production from prorated pools? Does that trouble you?

A. It certainly does.

Q. And that regard, do you feel that certain pools are not getting their fair share when compared to the total takes from the basin?

A. I think that's a very good possibility.

Q. And that the non-prorated pools, in fact, are deriving some benefit?

A. Absolutely.

Q. I know you've never been asked to do this in terms of thinking of alternatives: Are you aware of anything that could be done to give an incentive to any wells to get the non-prorated gas going other than with -- matters that have been advanced here today?

A. Well, you might give the same incentive that the

coal gas gets, and that's a tax credit.

Q. For all new development? Is that what you're suggesting?

A. Well --

Q. I'm not putting the word "suggesting" in your mouth. Is that -- when you say that you're suggesting or saying that it's possible that a tax credit could be given to wells, are you talking about new wells or all wells?

A. Well, usually those incentives are given to new wells, but it doesn't necessarily have to be that way.

Q. In terms of waste, you don't see any waste issue involved here?

A. No.

Q. If incentive isn't given in some form to wells to get certain properties developed and going, you don't see a potential for reserves ultimately being left in the ground?

A. I don't know that that's -- I'm not sure that that's waste, the fact that it's left in the ground this year, next year or year after.

Q. Or ultimately?

A. The price of gas will ultimately rise to the extent that it will be economical to drill those locations.

Q. It's your position that all locations some day will be economic to drill?

A. I wouldn't go quite that far.

Q. I didn't think you would. Let me ask you one last question. Are you aware that Gas Company has, in the last couple of weeks, been trying to negotiate a contract to purchase gas from one of the wells which is the subject of the application?

A. I became aware of that last night.

MR. CARR: That's all I have.

MR. STOVALL: I have a couple of questions for Mr. Lyon.

EXAMINATION

BY MR. STOVALL:

Q. Mr. Lyon, UNOCAL has testified today that the allowable system as it operates, if I understand in summarizing it correctly, the allowable system as it operates causes their management to not spend money to develop wells in the Rincon Unit because they cannot, with any acceptable level of comfort, predict that allowables will be and stay at a level which will allow them to enjoy a reasonable rate of return. Is that your understanding of their rationale?

A. I think that's a fair statement of what I heard them say.

Q. If I understand you correctly, you do not believe that the application, even taking away the issue of whether it's a well or proration unit, you don't believe this

application for a special allowable for three new wells in the unit is an appropriate way to address that problem; is that correct?

A. That's the way I feel, yes.

Q. Do you have any recommendations as to what the division might do to alleviate these concerns on management's part?

A. I think that UNOCAL has shown that there is a probable need for some incentives. I think that it might be well to, number one, set up a committee to investigate it; number two, to call a hearing to let people put input into changes, incentives that can be offered. Whatever you do, I think it ought to be on a pool-wide basis.

MR. STOVALL: No further questions.

HEARING EXAMINER: Is Gas Company connected to any of the wells out there now? Mr. Carr asked a question about operating wells. I wasn't sure that's what he meant. But does the Gas Company gather any gas from either the Basin Dakota or the Blanco-Mesaverde?

THE WITNESS: They may transport gas. I don't know for sure; but I understand that there is a gathering system which is about to change ownership and that Gas Company has been contacted to possibly take the gas from that system.

HEARING EXAMINER: If Gas Company did connect one of these proposed wells and it were granted the incentive,

would Gas Company take the gas?

THE WITNESS: I have no position on that.

HEARING EXAMINER: You don't know?

THE WITNESS: I don't know that much about that. That's somebody else's responsibility. I have no reason to think that they wouldn't, but I just don't know.

HEARING EXAMINER: You mean by not thinking they wouldn't, you'd think they'd probably take at the allowable rate or in proportion to the allowable rate in an equitable way?

THE WITNESS: I think they would take those wells equitably along with everybody else that they're connected to.

HEARING EXAMINER: Honoring their allowable?

THE WITNESS: Yes.

HEARING EXAMINER: And you may have answered this when you answered Bob's question, but you mentioned the right way to do this incentive. And would you have anything to add to that committee recommendation?

THE WITNESS: Well, I would hate to see the situation arise when somebody who doesn't know that much about proration in the San Juan Basin were to ask you, "How do you set allowables up there?" And you say, "Well, normally we set the allowable this way, but for UNOCAL the allowable is set this way and for Texaco it's set that way and for Conoco

it's set another way." I think that you're just tearing your system apart if you get into that situation.

HEARING EXAMINER: You mentioned flexibility with the 12 times January overproduction limit.

THE WITNESS: Yes.

HEARING EXAMINER: And under the system we used up until April to set allowables, production and overproduction was one way to get the allowable increase for the pool.

THE WITNESS: Yes.

HEARING EXAMINER: As chairman of the committee, did you intend that that committee that drafted these proposed rules -- did you intend that that continue to be a way to effect future allowables, production and overproduction?

THE WITNESS: Well, yes, to a large extent. I do not think that you can find a better indicator of market demand than the actual production and sale into the pipeline. I also envision that perhaps the industry would become organized in such a way that people who were purchasing the gas, or transporting the gas, or whatever would have a better feel for anticipated market demand. With the purchasers and transporters being so fragmented, the OCD had no way to really evaluate whether nominations were realistic or not. I'm hopeful that some day the industry may stabilize to the point that you can get meaningful nominations from the people who have an idea of what market

demand is.

HEARING EXAMINER: Do you think the allocation formulas are fair in these two pools? You talked about that some.

THE WITNESS: Well, the -- I must start with a presumption, and I think that the law would so presume that the formulas are fair and equitable because testimony has gone into the record to indicate that they are, and particularly in the Basin Dakota, when the formulas were reviewed and after all this review and study, a new formula was adopted.

HEARING EXAMINER: The law concerning the excessive discrimination between pools, you understand that as being an OCD requirement to monitor, or is that instructions to the purchasers and the transporters and gatherers of gas?

THE WITNESS: Well, it's one of those things that is hard to evaluate. You know, when does discrimination become excessive? Certainly there are some pools, and I can think of some off the top of my head, where the situation is ripe for them to take virtually full deliverability out of those wells in those pools. And in other pools, it is not so fortunate, and so there is a smaller percentage of the pool deliverability that comes out of those pools. It's a little hard to monitor those things, particularly with the amount of staff that the OCD has. And I think that about the best you could do would be to entertain somebody's complaint that

there is discrimination.

HEARING EXAMINER: I believe in answering Mr. Carr's question you indicated you thought there was a discrimination between the prorated pools and the basin Fruitland Coal production. Did I read that right?

THE WITNESS: Yes, you certainly did. And I'm sure you're aware of this, but the last figures that I saw on coalbed methane gas, that pool is the second largest pool in the state of New Mexico. It has passed Basin Dakota and is -- if it hasn't already passed Blanco-Mesaverde, it is about to.

HEARING EXAMINER: Do you have any further questions, Ms. Smith?

MS. SMITH: Mr. Examiner, I do have a couple of questions on redirect.

HEARING EXAMINER: All right.

REDIRECT EXAMINATION

BY MS. SMITH:

Q. Mr. Lyon, in your capacity as consultant for Gas Company of New Mexico, are you aware of whether Gas Company of New Mexico or Suntero purchases gas from either the Dakota or Mesaverde formations?

A. I'm not -- I can't say for certainty, but it's my impression that you do.

Q. Then put it this way: Are you aware of whether

or not Gas Company and Suntero Gas Gathering Company purchase gas within the state of New Mexico?

A. Well, I know that you purchase gas within the state of New Mexico. And on further reflection, I know that I have seen the proration schedule where wells are connected to Suntero and to Gas Company.

Q. And as a purchaser of gas in the state of New Mexico, is it fair to say that as a purchaser those companies are impacted by the prorationing rules in the state of New Mexico?

A. Absolutely.

Q. And would a change in those prorationing rules impact those companies?

A. Certainly.

MS. SMITH: Thank you, Mr. Hearing Examiner. I have no further questions.

HEARING EXAMINER: Mr. Lyon, you may be excused.

Mr. Stovall.

MR. STOVALL: I've got one witness, and I'll try to make it brief.

FRANK CHAVEZ

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

DIRECT EXAMINATION

BY MR. STOVALL:

Q. Would you please state your name and place of residence?

A. My name is Frank Chavez. I reside in Aztec, New Mexico.

Q. And how are you employed, Mr. Chavez?

A. I'm district supervisor of the District 3 in Aztec for the Oil Conservation Division.

Q. And how long have you been so employed?

A. Since 1978.

Q. And would you just describe your duties in that position as they relate to the proration system and, specifically, the Basin Dakota and Blanco-Mesaverde pools?

A. My duties in proration concern evaluating deliverability tests that are used and abused in calculating allowables, scheduling pools for testing for deliverability, assigning allowables to new wells on the basis of changes or new wells added to prorated pools. Also I serve on committees and make recommendations concerning proration to the OCD.

Q. In the process of doing that for the last 12 or so years, have you become familiar with the allowable system as it works within those two pools?

A. Yes, I am.

Q. And have you reviewed the application submitted by UNOCAL in this case and determined its effect?

A. Yes, I have.

Q. Have you prepared certain exhibits in connection with that application?

A. Yes, I have.

Q. And are you prepared to make certain recommendations today to the division with respect to that application?

A. Yes, I am.

Q. Mr. Chavez, as you make these recommendations, is it correct to say that you are making those basically as your recommendations as the supervisor of the Aztec district office, based upon your information and the effect of the application on that office and that you do not speak for the division as a whole; is that correct?

A. That's correct.

MR. STOVALL: Mr. Examiner, I would offer Mr. Chavez as an expert in the regulatory impact of proration.

HEARING EXAMINER: We accept his qualifications.

Q. (By Mr. Stovall) Mr. Chavez, again, you've reviewed the application, you're prepared to make a recommendation. Let me ask you first: Do you understand -- what is your understanding is the purpose of the application filed by UNOCAL?

A. My understanding is that UNOCAL would like a special allowable assigned to new wells as incentive to

drill those wells and further develop the Rincon Unit.

Q. Now, based specifically upon the testimony that you've heard today, and more generally upon any other input which you've had, what is your opinion, or what is your belief as to UNOCAL's reason for believing it needs a special minimum allowable for these three proposed wells?

A. I understand that they believe that they're impacted negatively by proration in these pools and --

MR. CARR: Excuse me, Mr. Examiner. I really don't want to start doing this, but this is just rank speculation, having one person speculate about what we think we may need.

MR. STOVALL: Mr. Carr, I'm only asking for purpose of background what Mr. Chavez's understanding is so you understand his testimony.

MR. CARR: Our testimony is set out, what our concern was. It speaks for itself.

Q. (By Mr. Stovall) You heard their testimony then; is that correct, Mr. Chavez?

A. Yes, I did.

Q. In response to the concern as expressed by UNOCAL, do you believe that the application is the way to address the concerns that they have?

A. No, I don't, for several reasons. One, the information that I've been able to gather shows that their premise is incorrect about them being negatively impacted by

proration, first. Second, they haven't fully understood how the current deliverability and proration rules actually can work to their advantage to gather the information for drilling new wells. And thirdly, their application would be a great -- equivalent application would be a big departure from our statutory responsibility, and, in fact, I think would be in opposition to protecting correlative rights.

Q. Now, when we talk about negative impact of the proration system, that means that the wells are restricted. Do you understand it to mean that wells are restricted to a production below an economic level for new development; is that correct?

A. No. That's the way they were trying to say, the way I understood it, but that's not the way I understand it. I've prepared some exhibits that indicate how proration has affected production, or how proration and production have been used in the Rincon Unit, at least since February of '90. And by looking at these exhibits, the data that they came from, it appears that they have not been impaired by proration from producing their allowables.

Q. As we go into those exhibits -- you've got Exhibits Number 1 and 2. Would you briefly describe what they are in general? And then we'll go to the specifics and importance of the exhibits.

A. Exhibit Number 1 is graphic, and some

explanations of -- some graphics and explanation of production, allowable, produceability, also how deliverability can be used to produce new wells to gather information, also a little bit of history on proration in the Rincon Unit.

Exhibit Number 2 -- I apologize for the quality of the exhibit, but I realized after I made my other exhibits that I didn't have the supporting data for the graphs, so at the last minute I did put these together. If somebody wants, I've got the original printouts. I've also got a copy on disk of these worksheets, if people would want these after the hearing.

Q. I understand when you say you didn't have the data, your Exhibit Number 1 was prepared with this information; is that correct?

A. Yes. Exhibit Number -- the data on Exhibit Number 2 was used to prepare the graphs and other information on Exhibit 1.

Q. Then what you subsequently did was put Exhibit Number 2 together to provide the backup data so people could check the information.

A. That's right.

Q. What is the source of the information in Exhibit Number 2?

A. The source of the information is the northwest

New Mexico gas proration schedule, starting in February of '90.

Q. Let's move on to the first page of Exhibit Number 1, and explain what that exhibit is, what it shows, its significance.

A. The first page of Exhibit Number 1 is entitled "Rincon Unit Dakota." On there I show graphical representation of the allowables in production and what I call produceability of the Dakota wells in the Rincon Unit from February of '90 through March of -- I'm sorry, through May of '91. I don't have the complete data for each month in each item, but I do have production and allowable from March of '90 through February of '91, which is 12 months. What this shows is that since February of '90 -- sorry, since March of '90, UNOCAL has pretty much consistently underproduced the Dakota pool in the Rincon Unit.

Q. Production is shown by the line with the squares?

A. That's right. The production is squares, the allowable is the diamond and produceability is the triangle. Only three months during that 12-month period did UNOCAL overproduce its allowable, and then only slightly during the months of April of '90 and August and September of '90.

Mr. Hering testified about allowable management, and there is nothing that's shown here on this particular

graph that indicates an attempt to underproduce during the summer months -- to accumulate underproduction and overproduce during the winter months. Produceability is something that I put in here, and it's based on the cumulative Q values of the 1990 deliverability tests in the Dakota wells in the Rincon Unit.

The -- to a degree, that would be the best producing day for a Dakota well in the Rincon Unit, I guess, if we were going to characterize it. It shows that consistently the wells are producing perhaps around 50 or less percent -- I'm sorry -- well, they're not producing more than 80 percent of the produceability in the Dakota. The pool has -- the Rincon Unit has been so underproduced that some wells have been reclassified from non-marginal to marginal.

Q. This exhibit, now, it shows production and allowables for both marginal and non-marginal wells; is that correct?

A. That's correct.

Q. So it reflects all the wells in the Rincon Unit, not just the non-marginal wells, which are affected any point in time by the allowable?

A. That's correct.

Q. Most affected. And it does not show the status of any individual well or proration unit within the unit,

but rather the overall status of production and allowables for the unit; is that correct?

A. That's what the graph shows. The data on Exhibit Number 2 shows that per well.

Q. Now let's move on to the second page. You talked about reclassification.

A. Yes. Specifically, on the non-marginal wells, the non-marginal wells have been so underproduced in the unit that in May of 1990 15 of the non-marginal wells were reclassified to marginal, and over 113,000 MCF of allowable of underproduction was cancelled. In September of 1990 eight non-marginal wells were reclassified to marginal and over 151,000 MCF of underproduction was cancelled. That's allowable that was assigned and not produced.

Q. If we go on to the next two pages, essentially is that correct to say that shows the same information for the Mesaverde wells in the unit?

A. Yes, it does.

Q. And what conclusions do you see there, again, just briefly?

A. Again, that the Rincon Unit has not produced its allowable as has been even assigned, so it indicates that there's been no restriction on production because of allowables.

At this point, I could also refer to the -- I

didn't include it as an exhibit, but Mr. Hering did refer to the gas proration schedule. The data from the April gas proration schedule is part of Exhibit Number 2, though it's a little bit hidden, as busy as that exhibit is. Anyway, it shows that at the end of February, which is the end, basically, of the winter production months, only three of the non-marginal wells in the Basin Dakota pool in the Rincon Unit were overproduced.

They were produced, overproduced -- number 149 well was overproduced approximately three days, the number 157 well was overproduced approximately a little over ten days, and the number 164 well was overproduced only about two days, and all the other non-marginal wells were underproduced, which indicates that they had more than adequate allowables and were not in any way restricted. One information I did not -- that's in the Basin Dakota pool -- information I did not include were reclassifications from the May proration schedule which was not published, but there were reclassifications made. I just haven't showed them, and I'm not ready to testify about those.

Q. Exhibit 2, the first two pages are the Dakota and the third page is the Mesaverde; is that correct?

A. That's right. And at the bottom of page two of Exhibit 2 I show that during the 12-month period from March '90 through February of '91, the Dakota in the Rincon Unit

was underproduced a total of 700 -- over 781,000 MCF. On the third page at the very bottom -- I'm sorry for the size of this -- it shows a Blanco-Mesaverde pool in the Rincon Unit was underproduced a total 323,683 MCF. So the premise of restriction by allowables, it doesn't seem to be clear from the actual production history in the Rincon Unit.

Q. Mr. Chavez, now, is there anything else with respect to your graphs and underproduction, your reclassifications, the first four pages of Exhibit 1 you need to discuss?

A. At this point, no.

Q. Mr. Chavez, you heard -- were here for some discussion which -- some questions which I asked Mr. Hering with respect to his assumptions and the new proration system, the six-month proration system that went into effect; is that correct?

A. Yes, I was.

Q. Now, have you got any information with respect to what happened with the new proration order and how that affected the Rincon Unit wells?

A. To some degree, yes. Starting with page five of Exhibit 1, this isn't the new proration order -- excuse me, this 8170 as amended. This is order R-9473.

Q. That's the actual proration order under the new schedule; is that correct?

A. Yes, it's the proration order which established and set the allowables for the pools in the state for the next six months.

HEARING EXAMINER: What page are you referring to, Frank?

THE WITNESS: The fifth page.

Q. (By Mr. Stovall) It's identified as UNOCAL's share of increased allowable from order R-9473?

A. That's correct. At the hearing that resulted in order R-9473 UNOCAL and others testified about needing more allowable in the Basin Dakota and Blanco-Mesaverde pools, otherwise, the allowables would be too low. What I did is I totaled the UNOCAL acreage factors and acreage deliverability factors and as a percentage of the pool acreage factors and acreage deliverability factors. And the Basin Dakota pool, using those factors, plus the increase that was allowed under that order, UNOCAL will get 16,800 MCF a month more than was originally recommended by the division on the basis of production from the pool.

Q. That's 16,800 MCF assigned to the non-marginal proration factors in the Rincon Unit?

A. That's right.

Q. For the Blanco-Mesaverde?

A. The Blanco-Mesaverde pool, I did the same calculation, and the increase is not significant; it's only

795 MCF.

Q. Have you done any sort of analysis -- let me back up. You've heard UNOCAL testify that they would like to drill some new wells, to do some reservoir testing, in effect, in the unit, that they would like some allowable to insure that they would be able to essentially let those wells pay out, assuming they are commercial wells. Have you done any analysis to determine if they could, in fact, do that under the existing system without the special allowables?

A. Yes. The special allowables wouldn't be necessary for testing a new well. Page six, which is titled "Current Rules Give Adequate Allowables for Testing of Wells," I have shown, given the F1 and F2 factors which are preset for the summer months only, understanding that they will go up for the winter months, and everybody anticipates that, so I don't have a problem with that, given an existing GPU, which each of these wells will be an infill well, and assuming an AD and 180 MCF and acres deliverability factor of 180 MCF, which isn't too far off, even considering Mr. Lyon's exhibits for an existing well on the pool. If we assume that a new well will have a D of 500 MCF a day, which I think may be optimistic, considering the history of deliverabilities in that pool, we would then say that the GPU deliverability would equal 180 MCF.

On the basis of the summer F1 and F2 factors, that would give an allowable to the GPU of 8,307 MCF. Producing only the new well at 500 MCF a day and a 30-day month, just for calculation purposes, the well would overproduce its allowable by almost 7,000 MCF per month. Given the pool rules which allow 12 times overproduction and no change in F1 and F2 factors, which we do anticipate to actually increase, this gives almost 15 months of steady production from a new well for testing purposes and evaluation purposes.

Considering the history of production in the pool also, the productivity of a well drops significantly after the first two to three months of production, so I anticipate that overproduction would be much less than what I've calculated here over time.

Q. Are you saying then that if they took the existing allowables for the pool, projected them over the next, say, three proration periods or allocation periods, six-month periods, and given reasonable anticipation of the production, that they would be able to produce those wells at or near capacity within the allowable system for a year or 15 months and possibly more, depending on the production capacity?

A. That's right. And that is generally more than adequate enough time to gather data for a well.

Q. Do you assume any production from the existing well on the proration unit for that purpose?

A. No.

Q. Any production from the existing well would reduce that somewhat; is that correct?

A. Yes, it would.

Q. Just for information, the last two pages of the exhibit are just the photos of the statute; is that correct?

A. That's right. They're copies of the statutes which I think are relevant to this case and the application. And my opinion that allowing a special allowable for any well or gas proration unit for any individual operator is -- impairs correlative rights in that any time you give anybody an opportunity to produce more than what has been defined as their just and equitable share of gas from a pool, you're impairing somebody else's correlative rights within that pool.

Q. Assuming the first part of UNOCAL's concern, as you've addressed, is you don't believe -- if I'm correctly restating your testimony -- you don't believe that the existing allowable system would prevent them from making an economic recovery from new wells; is that correct?

A. They themselves, I think, on their own exhibit show that they would recover at least a 15 percent return on investment under the current system. Whether that's

acceptable or not from one company to another -- from their testimony, they said no, that was not adequate, that they needed more. The way I understood their exhibit, they needed more rate of return of investment than 15 percent in order to drill these wells. So some companies may accept 15 percent and work within those constrictions.

The idea here is that if the industry as a total may need more incentive, greater return on investment, that's a different issue than one company wanting it. So granting an application for a single operator to make a rate of return on investment that's attractive to them would be completely outside of our responsibilities.

HEARING EXAMINER: Let's stay with the exhibits. Was that part of the exhibits that Frank was testifying concerning?

MR. STOVALL: I'm asking him some other questions now that are not specifically the exhibits. This is additional testimony.

HEARING EXAMINER: What was the question that he responded to that brought that response?

MR. STOVALL: The question was would they be able to drill -- essentially -- I think I'll summarize it -- would they be able to drill a new well under the existing allowable system and recover the costs, make an economically -- still stay within the existing proration system. And

that was the focus of these exhibits, was to say that he believed they could.

HEARING EXAMINER: I thought these focused on allowable and production more so than they did economics.

MR. STOVALL: His other comment was whether the decision to drill is an economic decision within a company.

Q. (By Mr. Stovall) I believe that's all you were saying, right, is that the economic decision of whether or not to drill, given the scenario as painted by a particular operator is the operator's decision, not the division's.

A. That's right. The idea is that the proration rules and the rules of OCD set an environment in which an operator decides or does not decide to do activity. He looks at that environment. If he can drill a well and make money, he will do it. If he can't, he won't.

Q. Next question, and I'll try to make this just a real brief one. Assuming -- UNOCAL has stated that one of the problems that they have in selling a drilling program to management is the predictability, the assurance that an allowable will stay at a level, assuming the current level were adequate to provide an incentive to drill, concern about whether or not it would stay at that level. Do you have any recommendations as to ways that that could be addressed if -- assuming the company's concern is there?

A. Yes. Over the last two years the deliverability

-- I'm sorry, the proration committee that Mr. Lyon headed and that a lot of people served on looked at what could be done addressing circumstances -- I think they were called "change circumstances" a while ago -- in proration and in environment producing gas.

One of the things that was come up, that was brought out was the six-month proration period during which allowables would be the same, that one of the justifications for that was not just for marketing gas where an operator would say, "Now I know what my limitation is as far as my gas market goes," but also to allow to make broader economic decisions about further investments in drilling in the prorated pools. There -- it is possible now to look at the data that will be used at the next allowable hearing to make some kind of determination into what range to expect F1 and F2 factors for the following six months.

So, in fact, we -- a company basically would have the information available to look at about a year, the six months for sure what allowables goes, the following six months to some degree of certainty that they'll be within the range of the production from six months previous. And that data is available. So we've got the information available for an entire year and that gives a little more certainty to an operator who's looking at what's going to happen in the next year with allowables.

MR. STOVALL: No further questions. I move the admission of Exhibits 1 and 2.

HEARING EXAMINER: Exhibits 1 and 2 are admitted.

Mr. Carr, do you have any questions of the witness?

MR. CARR: Yes, Mr. Morrow, I do.

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Chavez, during the UNOCAL presentation your attorney asked Mr. Hering if he considered as an alternative a unit allowable. Do you have an opinion on that?

A. Yes. We've discussed it many times informally and occasionally formally at some proration committee meetings. There are some advantages and disadvantages to it. I think it demands further study. The issues that came up were things like balancing around the edge of a unit where perhaps there should be a -- bordering a unit some -- one section or so of wells which would be called either fringe wells of the unit or buffer wells, whatever. And those would be monitored a little more differently than wells inside the unit that would share the allowable. But I think there's some merit to it, needs to be discussed a little more.

Q. Do you believe that assigning allowables on a unit basis might, in fact, have a greater impact, a greater

shock to the proration system than just special allowables on a case-by-case, well-by-well basis?

A. It might. That's why it needs closer study.

Q. Mr. Stovall also raised some questions about adjusting the ratio between the acreage and the deliverability. Do you have any opinion on that, or is that another topic that really needs further study? I guess my question is: Is that your recommendation or Mr. Stovall's or neither?

A. Neither at this time. I agree with Mr. Lyon to the degree that it would take some very good reservoir engineering now to refute the evidence that's been presented in the past to show that the acreage and deliverability allocation should be changed from what they are. I would be surprised that they would change significantly enough to make such an effort worthwhile.

Q. If I look at your exhibits, if I look at Exhibit Number 1, if I understand it correctly, what you have done here is you have basically prepared a production allowable and produceability profile for the Rincon Unit as a whole.

A. Well, for the Dakota, the Mesaverde.

Q. And allowables are not assigned to units as a whole.

A. No, they're not.

Q. In fact, they would be assigned to individual

proration units within this unit; isn't that correct?

A. That's correct.

Q. And you understand, I suspect, that UNOCAL is looking for a few good wells, not taking an overall reservoir look at their unit at this point in time.

A. Yes. When I was trying to prepare this exhibit, I thought of preparing it on a well-by-well basis, but I find basically the same information. The sum -- the production versus allowables is pretty much the same relationship throughout the pool for each well.

Q. Were you able to look at how much of the unproduced allowable could be attributed to marginal or non-marginal wells?

A. No, I didn't look at that. That could be done by looking at Exhibit Number 2.

Q. Wouldn't actually though the question of -- we'll do that, I'm not trying to avoid your answer -- isn't, in fact, a unit picture distorted by the fact that certain of the marginal or the poor non-marginal wells are getting allowable they just cannot make?

A. Well, yes. Cannot make -- let me put it this way: that they don't make.

Q. They don't have the deliverability or the ability to make.

A. I don't know that.

Q. You're not suggesting with your Exhibit 2 that the wells are being reclassified because UNOCAL won't produce the wells, are you?

A. I'm saying that they're not producing. I don't know whether it's a matter of the will or the ability.

Q. And so we could have -- all of these wells could be just their ability. You don't know what the reason is.

A. When I scanned the production, it appeared to me that they weren't producing. I'll put it this way: When I looked at the Q volumes from the deliverability tests, it told me that on its best day this is what a well would make. I know a well isn't on its best day all the time.

If you produce it about 90 percent -- and my experience in production has been that you can make about 90 percent of your produceability and function in a pretty good manner. If you're not doing that, then you're not optimizing. There may be something different you have to do in managing production of the well to try to need that produceability. To better answer your question, to get down to that point here, is when you look at the Q values versus what's actually produced on a month-by-month basis on the wells, they're significantly lower overall, marginal and non-marginal wells both.

Q. If we go back to -- I think it's the fifth page, UNOCAL's share of increased allowable from order 9473?

A. Yes.

Q. The number that you've indicated, 16,800 MCF, is more than originally was recommended. That's what you stated, isn't it?

A. I'm saying this is above the amount that was originally asked for by the OCD witness.

Q. How does that compare to the allowable, say, for the Basin Dakota for the preceding year for the same period of time?

A. I didn't compare them.

Q. Do you know if it was less or not?

A. I didn't compare them.

Q. Do you know how it compares to UNOCAL's request?

A. No, I don't.

Q. Would it surprise you to know it's substantially below both UNOCAL's request and what they got the year before?

A. I didn't know that.

Q. If we look at the next page, which is page six, it appears under the allowable system they could -- I guess on the last line, Mr. Chavez, is the figure I'm looking for -- they could produce for -- at about a 500 MCF per day rate for approximately 14.9 months.

A. That's right.

Q. That could still be during the payout period,

could it not?

A. Yes, it certainly could.

Q. And they might have to shut in at that point.

A. They might; but, as I indicated also, I think the time would be considerably more than that due to declining production after flush.

Q. You indicated that you looked at the -- reviewed UNOCAL's wells at the end of February, and you found only four or so overproduced?

A. Yes.

Q. Do you recall what testimony I'm trying to get back to?

A. Yes, the April gas proration schedule showed only three of the UNOCAL non-marginal Dakota wells were overproduced and all the others were underproduced.

Q. Did you compare this with how they might have been, say, a year before at the same date?

A. No, I didn't.

Q. This winter there were severe line freezes in the area, were there not?

A. I don't know.

Q. If there were, that might affect it, the amount of overproduction that would have accrued?

A. Not much. Generally, a line freeze is very temporary in nature. At the most, you're looking at three

or four days. During that period of time, the wells that are behind the line is usually in a lateral, not affecting a large number of wells. The wells build up, and once they're brought back on line after the freeze is cleared out, generally that built-up gas pressure allows them to recapture almost all of the gasses -- or produce all of the gasses that they would have produced during that time.

Q. Are you aware that there were unusually high line pressures in the area during part of this winter?

A. That happens throughout the pool. It happens throughout every year as more gas is put on the line. It wouldn't have been an unusual year.

Q. Don't you think the way to get a more representative picture of overproduced status of UNOCAL's wells would be to look not just at one point in time but perhaps look at a broader sample period to see if, in fact, those numbers accurately reflect the overproduced wells?

HEARING EXAMINER: I can't hear you.

Q. (By Mr. Carr) Don't you think it would be wiser, Mr. Chavez, to look at multiple points in time, not just one point in time, to determine how many wells wind up overproduced as a result of how they're managing a unit?

A. I don't fully understand the question. I'm sorry.

Q. If a year ago -- if you had looked at figures for

several years at the same point in time, and you might have -- is it possible you could have seen a different picture in terms of overproduced wells from this unit?

A. That's possible.

Q. And the bigger the sample, the more representative it would be?

A. Generally.

Q. And there could be error just by picking one point in time and using one point in time as a measure for the way an operator produces his unit.

A. Well, I don't know if you'd call one year one point in time, but yes.

Q. You recognize that what we're talking about in terms of our application is new development in the Rincon Unit.

A. Yes.

Q. And do you understand that we do not believe that new development will necessarily be the same as what current wells are able to produce, wells that have been producing for, say, ten years.

A. Yes, I understand that.

MR. CARR: That's all I have.

HEARING EXAMINER: Ms. Smith, do you have any questions?

MS. SMITH: Mr. Hearing Examiner, I have a couple of

questions.

HEARING EXAMINER: Go ahead.

CROSS-EXAMINATION

BY MS. SMITH:

Q. Mr. Chavez, do you understand that there is somewhat of a time lag in the reporting of overproduction in the gas proration schedule?

A. I don't know what you mean by "time lag."

Q. Well, from the time that overproduction happens and the time that parties would get notice of that overproduction because of the time involved in printing that into the report.

A. Well, there's a time difference there that -- but I don't know that it's significant.

Q. It's been suggested to me that it's as much as two months in some cases. Might a time lag of two months in reporting that information extend the 14.9 months that you've estimated on your page six of Exhibit 1 for an additional period, even assuming no decline deliverability?

A. Well, yes, yes, that would be possible; but I don't know that that's significant because once you get up to that point of time, like I say, I think the time was actually quite a few more months than that. And say if it would happen to be that the April production of some year puts an operator over the 12 times limit, he wouldn't get

notice of that through the proration schedule or through a notice from the division until June.

Q. So would it be fair to say that your calculation of 14.9 months on page six of your Exhibit 1 is a conservative estimate?

A. I think so.

MS. SMITH: Thank you, Mr. Hearing Examiner. I have no further questions.

HEARING EXAMINER: Mr. Stovall, do you have anything else?

REDIRECT EXAMINATION

BY MR. STOVALL:

Q. Mr. Chavez, assuming that, in fact, UNOCAL or any other operator had a problem of needing to have some assurance that they can recover -- is it correct to summarize your opinion that a special allowable on a per well or per proration unit basis is probably not an appropriate way to work around the proration system to grant that?

A. It definitely is not.

MR. STOVALL: I have nothing further.

HEARING EXAMINER: Mr. Chavez, you may be excused. Is there anything further concerning this case, a closing statement or anything of that nature?

MR. CARR: I have a brief closing.

MS. SMITH: I do as well.

HEARING EXAMINER: Go ahead.

MS. SMITH: Gas Company and Suntero Gas Gathering Company have presented testimony through their witness, Mr. Lyon, the former chief engineer for this agency that the application for special allowable should not be granted. Mr. Lyon has testified that UNOCAL's application dramatically deviates from the established OCD procedures in setting allowables and that even if he, in his attempt to try to apply the accepted formula, that the allowables requested by UNOCAL far exceed what they should be, and finally that the division's mandate of protecting correlative rights and preventing waste will not be served by UNOCAL's application.

In fact, this application, if it's granted, might well jeopardize the integrity and stability of the OCD establishing a prorationing system, and this will adversely affect producers and purchasers alike. We respectfully request that the commission deny UNOCAL's application.

HEARING EXAMINER: I request that you submit that in writing, and the other attorneys also.

MR. STOVALL: The only comment, speaking again from the standpoint of the Aztec office of the division, is that -- not particularly objecting to or denying the existence of a management problem in making a decision to drill a well --

the division does grant exceptions to its rules on occasion.

However, those exceptions are granted in unique circumstances applicable to the exception. This really isn't such a unique circumstance. It's an operator who wishes an economic incentive to drill a well, and there may be many of those in one of the largest prorated pools in the two largest prorated pools in the state. Therefore, the division recommends -- or the Aztec office recommends to the division that if, in fact, a mechanism is devised to provide an incentive where operators can make some long-term decisions that go beyond even six months or a year, that it be a mechanism which can be applicable in a more uniform and non-individualized manner.

MR. CARR: May it please the Examiner, UNOCAL is before you today not asking that the proration system be changed, but seeking an exception to it. We know this is a deviation from past practice. We're seeking an exception for three wells. We hope to collect data from these wells. And assuming we can obtain the results, we would hope to embark on a drilling program that we believe will result in substantial additional production for the prorated pools and particularly in the Rincon Unit in northwest New Mexico. There's been no drilling in this pool for approximately 11 years.

We have a situation now where we see additional pipeline capacity going out of the basin. If we are, from those old prorated wells, going to have new and additional deliverability so that we can produce gas to put in these lines, we've got to have some data, the data that will enable us to make some accurate decisions in terms of drilling. So we're before you asking for special allowables to permit us to drill certain wells to collect data and to make some decisions with concrete information on a long-term drilling program.

There's been concern expressed here that this will set a precedent, that you may see a wave of these. If that's the case, then those come before you on a case-by-case basis, and we'll have to judge those. We believe that when you look at your statutory standards of prevention of waste and protection of correlative rights and look at this record, you'll see that you need to grant this application.

Correlative rights is defined by our statute as an opportunity to produce without waste your just and fair share of the reserves in the pool. No one is going to have their correlative rights impaired by this application. No one's going to have their opportunity to not deny it. What we're asking for is an opportunity to get ready for what we see as a new opportunity to move gas from the basin and to

have prorated gas wells in a position where not just the Fruitland Coal Gas fills these lines, but that we also share too.

In terms of waste -- and that's your primary responsibility -- everyone here seems to think but us that it isn't an issue. But it's your primary jurisdictional responsibility to look at the waste question. We submit to you that our testimony shows that if something can't be done to get some of these wells drilled and some of the old conventional prorated gas moving, that ultimately some of it will be left in the ground.

Mr. Lyon wouldn't even go so far as to say that that wouldn't happen. If that happens, if some of it is left in the ground, that causes waste. So I think when you look at your jurisdictional charge in the Oil and Gas Act you'll find that on this record the application must be granted, and in so doing you'll not only be giving an incentive to a drilling program, but you'll be encouraging the development of prorated gas. You'll be increasing the sales of gas from the area, and you will ultimately be -- your decision will ultimately result in additional recovery of hydrocarbons from the area.

HEARING EXAMINER: Thank you, sir. Case 10309 will be taken under advisement.

MR. STOVALL: When would you like these closing

statements?

HEARING EXAMINER: Within a week.

MR. STOVALL: By next Friday?

HEARING EXAMINER: Sure.

(The foregoing hearing was adjourned at the approximate hour of 4:10 p.m.)

STATE OF NEW MEXICO)

:

COUNTY OF SANTA FE)

I, FREDA DONICA, RPR, a Certified Court Reporter, DO HEREBY CERTIFY that I stenographically reported these proceedings before the Oil Conservation Division; and that the foregoing is a true, complete and accurate transcript of the proceedings of said hearing as appears from my stenographic notes so taken and transcribed under my personal supervision.

I FURTHER CERTIFY that I am not related to nor employed by any of the parties hereto, and have no interest in the outcome hereof.

DATED at Santa Fe, New Mexico, this 30th day of June, 1991.

Freda Donica

Freda Donica
Certified Court Reporter
CCR No. 417

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10309 heard by me on May 30 1991.

Examiner
Oil Conservation Division