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 FASKEN OIL AND RANCH, LTD., FOR A NONSTANDARD GAS PRORATION AND SPACING UNIT AND TWO ALTERNATE UNORTHODOX GAS WELL LOCATIONS, EDDY COUNTY, NEW MEXICO	CASE NOS. 11,755
APPLICATION OF MEWBOURNE OIL COMPANY FOR AN UNORTHODOX GAS WELL LOCATION AND NONSTANDARD GAS PRORATION UNIT, EDDY COUNTY, NEW MEXICO	and 11,723
	(Consolidated)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

VOLUME II

ORIGINAL

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

April 4th, 1997

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday and Friday, April 3rd and 4th, 1997, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

April 4th, 1997 (Volume II)
Examiner Hearing
CASE NOS. 11,755 and 11,723 (Consolidated)

(Continued...)

TEXACO WITNESSES (Continued):

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E X H I B I T S (Volume II)

Mewbourne	Identified	Admitted
Exhibit 11	79	91
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Exhibit 13	87	91

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Fasken	Identified	Admitted
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* * *

WHEREUPON, the following proceedings were had at 8:20 a.m.:

EXAMINER STOGNER: This hearing will come to order. We're in consolidated Cases 11,755 and 11,723.

I believe we have the third witness for Mewbourne.

Mr. Bruce?

BRYAN M. MONTGOMERY,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name?

A. Bryan Michael Montgomery

Q. And where do you reside?

A. In Tyler, Texas.

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

A. I work for Mewbourne Oil Company, and I'm the manager of evaluations and reservoir engineering.

Q. Have you previously testified before the Division as a petroleum engineer?

A. Yes, I have.

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

A. Yes, I am.

Q. What materials have you studied on this prospect?

A. I've studied in general the production, the logs, the scout tickets, the geology and the reservoir engineering aspects of this area in the Morrow.

MR. BRUCE: Mr. Examiner, I tender Mr. Montgomery as an expert petroleum engineer.

EXAMINER STOGNER: Any objections?

MR. CARR: No objection.

MR. KELLAHIN: No objection.

EXAMINER STOGNER: So qualified.

Q. (By Mr. Bruce) Mr. Montgomery, what is your overall conclusion regarding your firm's well?

A. My conclusion is that this is an excellent Morrow prospect. We have a field that has been very prolific, in my opinion, in the Morrow and has been developed on 320-acre spacing.

After seeing the new results from a well that we can refer to on the previous exhibit by our geologist -- I'm not sure if this is -- which exhibit --

Q. Exhibit 8.

A. This is Exhibit 8.

Q. Eight, yeah, the land plat.

A. Try to get everybody back to where we are here.

In Section 12, Unit F, a new well was drilled and completed January last year. The public production data

shows it came on in April and has made approximately 4 million a day, every day, every month since, accumulating about 1.2 BCF, showing to me that 12N to the south, which was completed in similar intervals, did not adequately drain Section 12 and that we have hopes for similar accumulations in Section 1. And as I said, it's an excellent prospect at the location that we have picked out for the Morrow.

Q. That Texaco well in Unit F of Section 12 would then be the key well in this area?

A. Very much so.

Q. What general statements can you make about drainage in this Morrow pool?

A. Well, it's been my opinion that I would concur with the NMOCD's findings in previous orders that show that these can drain 250 to 350 acres -- the field has been developed on that spacing effectively at 320 -- and that there are significant reserves in those 320 acres. There's some very good wells out here.

These are -- This is an area in the Morrow where there are several pays. We have identified three of our main objectives, but there are others, and these sands come and go through here. So with several pays you get to lower your risk. Prolific production, new well information to the south of us. It just stands out as one of our

outstanding prospects, frankly.

Q. Are the wells -- Do the wells have variable producible capacity?

A. Yes, there are several wells with very high permeability, in my estimate, just through the public data. Looking at the calculated open flows, the DST information, some of these can be very high -- highly permeable, others maybe not so much so.

The areal extent is variable, the sand quality is variable. So it's a mixed bag, but it could certainly be very, very productive.

Q. Would you please refer to your Exhibit 11, identify it for the Examiner, and discuss the reservoir in the immediate area of Section 1?

A. Exhibit 11 is a simple table I put together just of the wells in the immediate area located around our location, proposed location, in 1. These long sections are funny. I think that's 1W.

And what I'll start out with is just by identifying this exhibit as a middle Morrow reservoir, statistical sheet of what I conclude are facts.

And I have four wells listed here, and for each well I try to show the location by unit designation, the net pay in the middle Morrow reservoir. The initial production date would probably be a better heading there;

that's the date of initial production. The initial pressure divided by Z factor, or P/Z, obtained by various means but normally public data. And the estimated ultimate recovery from just the middle Morrow.

This -- As I've said before, these wells are -- have multiple pays, and it's not unlikely for a well to be completed in one zone, depleted and then recompleted in another; or completed in one zone, recompleted and commingled.

Some work was done, some detective work and some analysis on the decline curves with the scout ticket information to try to separate what exactly was the middle Morrow on some of these wells where other zones produce.

You can see at 12N I have in the comments MM, LM. That means there was a commingling, in my opinion, of the middle Morrow and the lower Morrow, and I attribute 1500 million cubic feet to the middle Morrow.

12F is a brand-new well, and I wrote "approximate minimum". I believe that could be much higher, that that well may be a 6-BCF well in the middle Morrow, but it's hard to tell when the well isn't declining. And I don't have two points of pressure to help do some volumetric analysis or some material balance analysis, let me say.

So it's a -- It's also trying to show one other thing, that to the south in 11P and 12N and 12F -- and I

could have just kept going -- there's prolific production.

But there is some risk in going north. In that 1P you can see it only made 322 million cubic feet and is thin, thin in the respect it has 10 feet, it doesn't seem that much thinner than 12N or 11P, but maybe to the north that thickness is going to get you that kind of well.

So there's some, in my mind, serious risk of going too far north to getting out of the productive Morrow pays.

Q. Now, if you get -- Based on what you've looked at, what if you get 10 feet or less of thickness of net pay? Is that bad?

A. That could be very detrimental, especially if we were forced to drill too far north.

Even at the location we have here, it would probably -- wouldn't be as good of a well as we've seen in these other wells. I expect some pressure depletion in these reservoirs. Even if the net pays are not connected in a strong degree, there's certainly going to be some gross pay that's connected.

So ten feet would probably not be as good as we'd hoped for, and we'd like to try to get something better.

Q. Okay. Now, you mentioned the well in Unit N of Section 12 as being commingled. Actually, the Morrow is one pool, all of the Morrow is one pool --

A. That's correct.

Q. -- so it's not strictly commingling?

A. Not in the definition, maybe, by the Commission, but in two reservoirs that would have, maybe, different permeabilities or different pressures, and I've tried to break out this Morrow into each reservoir, commingled to that extent, thank you.

Q. Okay. Now, can you compare Mewbourne's location to Fasken's proposed location as to the Morrow?

A. Yes, I can. I believe theirs -- again, it's strange, these unit designations -- but is at 1T. And referring back to our --

Q. -- Exhibit 9.

A. -- Exhibit 9, it looks to me -- and I'll try to make it simple first. Geologically, it's thinner, geologically and geographically, I suppose, it's just closer to the poorer wells. There are dry holes, there's this thin well, this old Fasken well that they drilled that we wouldn't be happy with now.

And there are many sands that go through here, and you have to pick out which are your main objectives and, if there are competing main objectives, somehow accommodate those. And it just boils down to north is bad and south is good, and it's extremely good.

Q. And Mewbourne's well is further south?

A. That's correct.

Q. In your opinion, should a production penalty be assessed against Mewbourne's proposed well?

A. I do not believe so, and I'd like to take that and maybe make it a long answer.

In my opinion, there are two concepts for this field and these circumstances where a penalty could be begun to be thought about.

One is based on, we just have a 320-acre unit in a field that is set up for 640 acres. But as to that point, the OCD has as much as ordered 320-acre development in their previous rulings.

Order R-4157-C and -D conclude in their findings that this field is draining 250 to 350 acres -- I'm paraphrasing here -- and that it approved the 320-acre development, and as we know, then, then, they went back to 640-acre but allowed for the 320.

Basically, all the other wells in this field are on 320 acres. There's no proration anymore. There's just no reason for a 320-acre unit to be penalized, because it's not in a 640-acre field of this type.

And also, I understand Texaco has waived their objection to Fasken's location for a 320 nonstandard unit, so they must not be worried about 320 acres as part of the penalty.

Secondly, we're too close to the line, and there are many reasons where we shouldn't be penalized for that reason. Again, some of the same reasons that I just mentioned come up, but let me just restate that the Commission has found, and I concur, that there are several Morrow sands.

We don't even know which sands we're really going to be completed in when we complete this well. They may not be the same sands the 12F are in. I would agree that we would hope they probably would be, but we just don't know. How can you penalize somebody before you drill the well when you're not sure which of the several sands that you're going to be producing out of?

And these several sands, permeability and drainage area are variable. Look at 12F and 12N. Texaco drilled both wells. 12F was drilled in 1972 or so, produced a bunch of gas out of these zones. And 12F comes on just gangbusters. There's obviously incremental reserves in those sands. Did they impact 12N? If they do, why didn't 12N produce more?

So I feel like it's difficult to even talk about a penalty based on too close to the line. But I do have an idea of how that might be accomplished if the Commission so desires, and I have an exhibit to that effect.

Q. Before we get into that, if you had two wells,

say one in Section 11 -- I mean, excuse me, one in Section 1 and one in Section 12, that were as close as they could be at standard locations, how far apart would they be?

A. If they were directly north and south of each other, 1650 feet times two, 3300 feet.

Q. And how far is Mewbourne's proposed well from Texaco's well in unit F of Section 12?

A. 12F will be approximately 3200 feet from our proposed location, which is much further than it is from their own well in 12N.

Q. Another matter, Mr. Montgomery: These other operators in the pool, they've had a substantial amount of time to produce their reserves, have they not?

A. That's correct.

Q. And there have been substantial recoveries or ultimate recoveries from these offsetting sections?

A. That's correct.

Q. Before we get into what you just referred to, just briefly identify Exhibit 12 for the Examiner.

A. 12 or 13 -- I've got two more -- Which one are we talking about?

Q. Just identify the AFE exhibit.

A. The AFE is Exhibit 12.

Q. And what is the completed well cost?

A. This is a little bit illegible, so let me read

these off. This is $743,800 to drill and complete a Morrow well at this location.

Q. And are Mewbourne's and Fasken's AFEs comparable?

A. Yes, as far as Morrow is concerned, yes.

Q. Now this is, you know, a fair amount of money. Based on that amount of money, do you need to reduce your risk in this well as much as possible?

A. Absolutely. And any penalty that is too extreme would be very detrimental to the economics.

Case in point, there's a well at 11P that came on in the middle Morrow at a very decent rate, high rate, but at a steep decline, 70 percent per year.

If you're penalized too much and you decline at that rate, you might have an uneconomic condition and it may not be worth the drilling of the well.

Q. And then those reserves in Section 1 would go unrecovered?

A. That's correct. Right now, I believe we're not -- We're not getting those reserves out, obviously, we need to protect our rights and prevent waste. And I think by drilling the well we'll accomplish both those.

Q. Now, you were in the room yesterday, were you not, Mr. Montgomery?

A. I was.

Q. And did you hear Mr. Carr questioning Mr.

Williams about, perhaps, a footage-based penalty?

A. I was. I did hear that.

Q. And something on the order of 60 percent -- I don't know if that's Texaco's proposal, but that's how I understood it.

A. I understood that, and that disturbed me greatly.

Q. Do you think that's a reasonable penalty?

A. I do not.

Q. If a penalty were assessed, do you have a proposal?

A. I do. What I believe is, because of the variable nature of these reservoirs that a -- I will call a surface acreage method should be used, and that -- Just bear with me as I go through the Exhibit 13.

I've drawn on here two squares that I tried to make 640 acres. And I know Section 1 is actually a little taller and these may not be perfect to scale, but I think the concept is sound.

And what I've shown on here is two locations at 1600 feet from a common boundary. And if you notice, everything being equal, if two wells were drilled, they would probably meet at that boundary and drain in a fair way.

If you move the north half -- the north location south, down to a 660 location, in effect what you do is,

you move the line where those two will meet, south of that governmental section line, and you begin to see there will be some encroachment. That calculation is shown on the left.

If you add the 660 feet, that you get from the unorthodox location down to the south line, to the 660 feet of a legal location and say that those two together are 2310 feet, halfway between there will be at 1155 feet, and that's shown on the left-hand side.

You could -- Probably I should have done this, but you could just draw a line about halfway between those two circles, and you'll see an area begin to be encroached upon.

It's simple enough to calculate that area. That area is the distance from that governmental line to the midpoint, which is 495 feet. That's that equation 1155 minus 660. And if you find the area of that across that mile -- it's not exactly 5280; this section is 4972 feet, so I used that times 495 feet -- you get an areal number of 56 acres encroached upon. That's what you're going to outcompete the southern legal location with. Divided by the standard conversion of 43,560 square feet per acre, that gets you that 56-some acres.

What I then would do -- and I apologize again for not putting this last equation on here, but I would take

320 acres, divided by 320 plus 56.5, and that comes out to about 85 percent.

In other words, we need a penalty, at the most, of 15 percent, based on a production penalty. If we are curtailed that amount, we -- everything else being equal, they would be able to outcompete us for that acreage. And that could be done on a six-month test of calculated open flow, limit yourself. If we have a 5- or 10-million-a-day well, that's a serious penalty. But of course we're happy; that's a good well.

There will come a time when the calculated open flow would reach a limit to where it's probably not worth testing anymore, you're no longer impacting the offset wells when you have a marginal well, your shut-ins may cause undue costs and damage, you may lose reserves by shutting a well in and swabbing.

So at some point you would have to end that testing. I propose a calculated open flow of a million a day, and in a nutshell that's what I think might be a fair way to approach a penalty. But it's so difficult to know what we're going to -- Well, I've gone through the reasons why I don't think there should be a penalty.

Q. But -- So you're proposing a 15-percent penalty, but that would assume a couple of things, wouldn't it, Mr. Montgomery? Number one, that you're completed in the same

interval as the offset wells?

A. That's correct.

Q. And it would also assume that your well would have the same producing capabilities as the offset well?

A. That's correct, if we got much less perm, even though we had a lot of volume, we shouldn't be penalized for that or we'll never recover what is due ours, even under our section.

So it's so hard to tell now, before you drill the well, what the penalty should be that it's difficult to even say there should be one.

Q. Now, if a penalty is imposed, would you propose a minimum rate of production that you'd need?

A. I would.

And I've alluded to that if we do an 85 percent of calculated overflow, that once that calculated overflow reached a million a day that the testing would be over and that we would be allowed to just produce at whatever rate the well will do.

The offsetting well to the south has been doing 4 million a day for nine or ten months. And, gosh, we hope we have that good of a well, obviously. That's why we like this prospect.

And so we feel like, you know, we'd be in great -- and if there was some kind of cap instead of a

calculated overflow, we certainly wouldn't want to be much below the 4 million a day, 3.5 million a day. There's a possibility that you'd go on a 70-percent decline like the well in 11P, and if you do that, you don't make that much gas, starting at 3.5 million a day.

So I believe that if a penalty is assessed, it should be based on calculated open flow, and it should be of this mile nature of 15 percent, or let's call it 85 percent of the deliverability would be our cap.

Q. Were Exhibits 11 through 13 prepared by you or compiled from company business records?

A. Yes, they were.

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

A. Yes, sir.

MR. BRUCE: Mr. Examiner, I'd move the admission of Mewbourne Exhibits 11 through 13.

EXAMINER STOGNER: Any objections?

MR. KELLAHIN: No objection.

EXAMINER STOGNER: Exhibits 11 through 13 will be admitted into evidence.

Thank you, Mr. Bruce.

Mr. Kellahin?

CROSS-EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Montgomery, for simplicity's sake let me refer to the Texaco wells as the Levers 1 and 2, the 1 being the 1970 well, and the Number 2 is the newer one, the 1996 well, all right?

A. Yes.

Q. Is -- Your discipline is as a reservoir engineer?

A. That's correct.

Q. As a reservoir engineer, did you study to determine if there was any pressure data available on the Levers 1 well?

A. Yes, I did.

Q. And did you see if there was any pressure data available on the Levers 2 well?

A. Yes, I did.

Q. And was there any pressure available for either of those wells?

A. Yes, I had some scout tickets that gave me some pressures.

Q. All right. Are there multiple pressure points in both of those wells available to you?

A. There are several pressures listed on the scout tickets for different reasons, flow pressures, shut-in pressures.

Q. You've concentrated on your examination using what I believe to be the Morrow green sand package that is shown on Exhibit Number 9 that --

A. That's correct, we believe --

Q. -- Mr. Williams presented yesterday? That's what we're going to focus on?

A. That's what I have focused on --

Q. All right.

A. -- so far, that's correct.

Q. When you looked at the Levers 1 well --

A. Yes.

Q. -- did you make a decision as to whether that entire sand package in the green sand was perforated in the Number 1 well.

A. Let me review my notes.

Q. All right.

A. Okay, I'm getting prepared. Are we talking now, again, about the Levers Number 1 well?

Q. Yeah, the 1970 well, Levers 1, whether this green sand package was perforated through that entire sand interval?

A. I show the perforations on -- from public scout data to be 10,290 to -300, 10,312 to -18, and that would be the middle Morrow green or portions thereof, adequate to drain the middle Morrow.

Q. All right. The answer to the question is that it did not completely perforate the entire green sand package; is that not true?

A. I might disagree with you on just exactly what was perforated if you're talking gross, net, gamma ray, porosity --

Q. For purposes of the question, what would you expect to be the original undepleted pressure in that sand package?

A. That is very difficult to tell. What I've done is gone through the public data, not being the operator of this well, and pull up information.

Luckily, on this well I have some DST information in the lower Morrow, what I'm calling orange and brown sands, but not in the green, unfortunately. And when you do your reservoir engineering and calculations, you need to know how much volume came out of each sand and the pressures of each sand.

And there are some holes in the data. I don't think I can pin down that pressure at initial. I have some estimates on a table based on --

Q. Based upon the literature, what would you anticipate to be virgin pressure in this green sand interval?

A. The virgin pressure in the green sand could

easily be 4400 pounds.

Q. All right.

A. I'm not sure it was a virgin pressure at that well, but 1972 or 1970 it very well could have been.

Q. All right. That well produced -- Is it still being produced?

A. Yes, to the best of my knowledge that well is still being produced.

Q. All right. Approximately 20 years later Texaco adds the Levers 2, in 1996. Is there pressure information on the green sand to tell you what the pressure was when they perforated that sand interval?

A. There is a commingled shut-in tubing pressure.

Q. Is there any way to analyze that to come to some engineering conclusion about the pressure in that green sand interval?

A. There is a way to analyze the pressure to see what the bottomhole pressure was. But to determine the pressure between these two variable sands, it would be difficult to know exactly which pressure -- Not being the operator, there may be other data I don't know about. I would be hard pressed to have an absolute number, but I might have an estimate, and I think I've tried to make an estimate on one of my exhibits.

Q. Based upon that, what is your estimate of the

pressure in the A sand when it was completed by Texaco?

A. The A sand in 12 in the Levers 1?

Q. Uh-huh -- No, the Levers 2.

A. The Levers 2 has not been completed in the A sand as of yet. The A sand I call the upper Morrow. We have been talking about the green --

Q. No, I'm confusing you and me. I'm talking about the green sand.

A. The green --

Q. All my questions are on the green sand package that you focused your attention on.

A. The green sand -- and it's a fairly loose number. I put down here 4100 pounds on my exhibit, and that's based on that shut-in tubing pressure and the feeling that the green sand may have been less depleted than the other two sands, and looking at the logs and a little bit of calculations in those respects.

But it's not a hard and fast number. It's really hard to tell.

Q. Can you tell one way or another whether there has been interference in this green sand package between the Levers 1 and the Levers 2 well?

A. If you had the pressure data, you could talk about pressure interference.

Q. Yes, that's my point.

A. My thought is that there has been --

Q. Okay.

A. -- to some small degree, because the well is so strong. It's not going to be a large amount of pressure drainage, or the well wouldn't have been as good in 12F.

Q. Let's talk about the performance of the new well, the Levers 2.

A. Okay.

Q. Based upon pressure data, are you able to show a pressure decline in the Levers 2 well at this point?

A. No, I'm not. I --

Q. Based upon production data, has that well established any kind of decline in the A -- in this green sand package?

A. It looks like it's being choked back and is flowing at constant rate, and maybe we can get some tubing pressures from Texaco later and find out.

Q. At this point, then, there is no reasonable engineering data available from which to reach conclusions about the expectation of an ultimate gas recovery from the Levers 2 well in the green sand?

A. That's absolutely incorrect.

Q. Okay. How are you going to do an EUR if you don't have a production decline established on that well yet?

A. What you do is, you look at the whole field, and you look at all the facts.

Q. All right, my question was, as to that well --

A. I'm coming -- I'm trying to answer it.

Q. All right.

A. There are typical declines, there are data in the other wells that can be used. First of all, notice 12N produced out of this zone for quite some time, and yet 12F is as strong as it is. If it went on a 50- or 60-percent decline today, I think we'd have this 3-BCF number that I have as an approximate minimum.

Q. All right, there's --

A. You're right, there's a wide range of numbers we can give this well; I'm not trying to evade your question --

Q. Well, let me understand what the decline is.

A. -- but I -- Let me finish my point about -- I'm trying to answer that question.

Q. What decline rate did you establish, then?

A. The decline rate is unknown because it has not declined, but I'd like to finish that other question, if I may.

So what I've done is, by looking at all the wells and seeing the performance of the green sand in general, we can get a range of ideas. And I give you the fact that the

range is quite large, but in my opinion the middle Morrow green reserves in 12F are substantial, very encouraging well, we'd love to drill this well and get into something like that. We think there's significant reserves left in the green sand. It's tough to pin down.

Q. All right. Have you finished your answer?

A. Yes.

Q. All right.

A. Thank you very much.

Q. My question, sir, was what decline did you infer for establishing a decline on the Levers 2 well when it doesn't establish a decline for itself?

A. I have established no decline for that well. There are a range of declines that would seem reasonable --

Q. Which ones did you use?

A. -- to give you -- Well, I've used 50- or 60-percent decline, and we may even go to 70-percent decline, as evidenced by 11P, 11 -- So on the -- on that end we have that steep decline.

On the upper end it's hard to say how good it could get. But it's not unreasonable, looking at some of these other wells, to think a 30-percent decline might give you substantially more reserves.

Q. All right --

A. And the average recovery out here in the green

sand may be 3 and 4 BCF in these good wells. So I think we're at least that and maybe better.

Q. When I look at Exhibit 11 and I find that you've inferred 3 BCF of EUR for the Levers 2 well --

A. That's correct.

Q. What assumptions are made to get that EUR?

A. I don't have the exact number, but it's approximately taking 70 percent, 60 or 70 percent, from current rates and just dropping it straight down like it's all over. And if that's the case, it's not going to be good news. But it hasn't happened yet --

Q. What did you use for --

A. -- and that's --

Q. -- an initial rate?

A. The 4 million a day.

Q. Okay. And you used an initial pressure of this 4100 pounds?

A. The initial pressure didn't come into the 3-BCF equation.

Q. All right.

A. It's just two separate pieces of information.

Q. All right. Did you attempt to do any volumetric calculations to determine gas in place in the green sand package?

A. Yes, I did.

Q. And how did you go about doing that?

A. Well, I did my own study prior to these hearings and just in trying to evaluate this prospect. And working with our geologists and some net numbers, I began to develop some what-if scenarios, if you will, on how big this green sand might be.

It's very variable and difficult to do, but there's certainly the chance that at even a reduced pressure of 4000 pounds, 3500 pounds, 3000 pounds, if the area is large enough -- and we show some areas that look like the average or substantive areas that we've used earlier on these calculations -- the volumetric numbers could easily be 10 BCF, 8 BCF, 5 BCF, in those ranges --

Q. All right, let's look at Mr. Williams's Exhibit 9, and show me the container that contains that volume of gas.

A. Okay, Exhibit 9 has several pieces to it, and we're going to be talking about the upper -- or the bottom left corner, the middle Morrow green sand net isopach.

Q. Yes, sir.

A. This is his interpretation, and we worked with this, and I played around with some "what ifs", and so I have a range of numbers. I don't think I'll be able to exactly answer a question, to say exactly how much gas does this exact map have.

Q. Mr. Montgomery, all I'm asking you, sir --
A. Yes.
Q. -- is to describe on this exhibit the container --
A. Okay.
Q. -- that fits this volume of gas.
A. The container here looks to be 320 ares in the proration unit, with other areas outside that, that could contribute to production. There is a 25-foot contour line, a 20-foot contour line, a 15 contour line and a 10-foot contour line, as shown on the exhibit.
Q. Using volumetrics, did you calculate the gas in place in the green sand package contained within the subject spacing unit?
A. Not off of this map.
Q. Okay. Off of any other map do you have an estimate of what the gas in place is for the green sand package within the spacing unit?
A. Yes, I would say that there's a range of numbers.
Q. All right, what's the range?
A. The range of numbers being anywhere from 3 BCF to 6 BCF.
Q. That's gas in place?
A. Gas in place --
Q. Okay.

A. -- in the green sand. There's several variables that make that range, that magnitude.

Q. Let's talk about the proposed Mewbourne location. Has that location always been the location proposed by Mewbourne?

A. This -- I'll have trouble, and I may not be able to speak to every location, but I'll be able to speak to my knowledge of the locations that we've thought about here.

And I think, if I remember, there were two possible locations that we thought might be attractive: One exactly where it's at, and, let's see, that would be W, 1W; and the other location, the 40-acre offset to the west at 1V.

Q. Okay. Were there any other locations considered?

A. No, sir.

Q. Those were the two?

A. That's right.

Q. Okay.

A. That I know of.

Q. Let's talk about the current proposed location that Mewbourne has and its relationship in the reservoir to the Levers 2 well.

A. Okay.

Q. From looking at the isopach, it would appear geologically that the evidence demonstrates the ability to

infer a connection in the green sand package between the Levers 2 well and your proposed location?

A. That's correct.

Q. With that assumption, can you also infer that these two wells in that package would be competing for the same reserves?

A. I believe so.

Q. Okay.

A. And I think they've been doing it for several months, and I wish we could drill a well.

Q. No, I meant as to your location and the Levers 2, if your location is drilled and is productive, it's going to compete with the Levers 2 well?

A. We think -- That's my opinion.

Q. In terms of competition, when you look at wells competing with each other, am I correct in understanding reservoir engineers will use the concept of a no-flow boundary?

A. Yes.

Q. Okay. Can you estimate for us, based upon your experience and education, where that no-flow boundary would be between the Levers 2 well and the Mewbourne proposed location?

A. I began to talk about this on direct, and let me go through that again.

These reservoirs, not just the middle Morrow green, are variable, complex. The permeabilities, the thicknesses can do more than what our maps show.

But if you just assume constant thickness, or if you assume these maps, you could start to talk about a position about midway between these two wells, if permeability was the same, if -- There are a lot of other ifs to qualify that statement.

Q. I understand, Mr. Montgomery.

A. Okay, thank you.

Q. If we make those assumptions, then, what is going to be the distance of position of that no-flow boundary, if it's equal distance between the two wells? How many feet out, if you will, from the Mewbourne location, going south --

A. Uh-huh.

Q. -- do we get before we hit the no-flow boundary?

A. There is a slight offset in the -- It's not exactly north and south.

Using just north and south lines, it's approximately 660 feet plus, I think, 2448, which be about 3000, 3100 feet. Since there's a diagonal involved, it would be a few more feet than that. We could certainly sit down and calculate it. But that gets beyond those ifs that I qualified myself. But let's just say 3100 feet, 3200

feet, something like that.

The total distance, excuse me. The answer to your question --

Q. Yeah, you're going to have to divide that in half?

A. -- is to cut that in half, that's right, excuse me.

Q. So about 1700 feet --

A. 17 --

Q. -- 1800 feet?

A. -- that would be a good number.

Q. All right. The setback is 660, so if we use the assumptions thus far the Mewbourne well is going to be taking reserves from the Texaco spacing unit a distance that is the difference between the 1700 and the 660 number?

A. No, that's not correct.

Q. All right, let me ask you again then. If you're using the no-flow boundary of about 1700 feet --

A. Uh-huh.

Q. -- and if I subtract the 660 from it, the difference is going to be the drainage component into the Texaco spacing unit?

A. Word it again for me, please.

Q. Yes, sir.

A. I'm sorry.

Q. The distance to the no-flow boundary is approximately 1700 feet.

A. Okay.

Q. Okay? You're going to be about 1100 feet into -- Your drainage pattern is going to be about 1100 more feet into the Texaco section?

A. Right. But even a 1650 location might get you there because of the distance from that well.

Q. All right, sir.

A. Already across the line slightly anyway. Even a legal location, they would meet across that line to some degree.

Q. All right. When you look at the data within the pool, and we have a range of drainage patterns, assuming circles, of 250 to 350 acres, I believe was your testimony?

A. Paraphrasing, that's -- Yeah, something like that.

Q. All right. What would be the radius for a drainage circle that contained 320 acres?

A. 2106, I believe. These are not circular drainage patterns but --

Q. I understand.

A. Okay.

Q. Is there a water drive component to any of the Morrow reservoirs that are targeted in the spacing unit?

A. I could not find any water drive component in the pressure data, the production data. It seems to be volumetric to me.

MR. KELLAHIN: All right, no further questions, Mr. Examiner.

EXAMINER STOGNER: Thank you, Mr. Kellahin.

Mr. Carr?

EXAMINATION

BY MR. CARR:

Q. Mr. Montgomery, I think you summarized your testimony basically when you said north is bad, south is good. Isn't that what you said in describing --

A. That's correct.

Q. And as we move to the south, you move toward Texaco, do you not?

A. That is correct.

Q. Now, based on your experience, it's hard to predict exactly what the Morrow formation is going to be doing in this area or other areas; is that not a fair statement?

A. That's a good characterization of the Morrow, yes.

Q. And if we assume that we are -- have two wells in a formation, and as we -- one area is good and one area is bad or poor or not so good, isn't it fair to assume that

the well in the poorer area is, in effect, going to be draining more from the acreage toward the good well?

A. Would you state that again?

Q. If you look at the well you're proposing 660 from the lease line is in a poorer portion of the reservoir than the offsetting Texaco well. Would you expect there to be radial drainage or elliptical drainage?

A. The drainage will follow the channelized -- be more elliptical than radial.

Q. And would it not extend farther to the south than to the north, that is, toward the good reservoir?

A. We believe the channel does run north and south, so the extension would be that direction.

Q. And it would go more toward the good portion of the reservoir than farther north where the reservoir deteriorates?

A. It may tend to drain the better portions of the reservoir, more so than the poorer portions. And if you're at a poor portion, you might not get a very large drainage radius to begin with, you get a 40-acre.

Q. And that's a factor of the quality of the reservoir under your acreage; isn't that right?

A. We do not know the exact quality of the reservoir under our acreage. We hope the quality is fantastic and equal to 12F.

Q. But that doesn't override your general characterization that in this area north is bad, south is good?

A. Right, just to what degree and how far north is good north.

Q. When we look at what you're proposing, you're proposing a well 660 feet from the southern boundary of your acreage; isn't that correct?

A. That's correct.

Q. Texaco is, in fact, substantially farther south; they're 2400 feet from that common boundary; isn't that also correct?

A. That is correct.

Q. Do you have an opinion as to whether or not the well in the north half of Section 1 is, in fact, draining reserves from the -- I mean the north half of Section 12 is, in fact, draining reserves from the south half of 1?

A. I'm concerned that it is. I do not know for a fact if it is or isn't, but I'm concerned that it is.

Q. So we have fairly -- the potential for fairly large drainage areas in the reservoir; isn't that fair to say?

A. Potential for larger than the 350 feet. But I don't know how large "large" is, because 12N produced for all those years, and if it was thicker, as you're starting

to work this argument, to the north of 12N, why didn't 12N do a better job of capturing those reserves around 12F? 12F comes on, it's a great well.

So things can happen in a hurry. 12F and 12N are closer than our location to 12 --

Q. Mr. Montgomery, this will take a very long time if we make additional points and don't just answer the questions. So I'm going to ask you to answer the question that I ask, and if you want to make additional arguments you can do that with your own counsel. Is that agreeable?

A. Yes, sir.

Q. All right. Now, my question was, initially, you have -- and you answered, I believe, that you see drainage from Section 1 to the Texaco well in 12; is that right?

A. No, I see no drainage as of yet out of Section 1, I don't have any well point there to see what the pressure is or --

Q. So you're seeing no drainage; you're not concerned that the wells in 12 may be draining, in effect, 1?

A. I'm concerned that it might. I don't have the data. I have geologic data that suggests it might, I have a Strawn well that suggests it might. I don't have a new well in Section 1 to see what's happening.

Q. Are you -- You have looked at pressure

information, have you not, on the Levers 1 and Levers 2

A. Yes, I have.

Q. In fact, there is pressure communication between those two wells, is there not?

A. There seems to be a reduction in pressure between the 12N and 12F.

Q. Now, you understand this Division is charged with protecting correlative rights, do you not?

A. Yes, sir.

Q. Do you understand the term "correlative rights"?

A. I think I do.

Q. All right. Let me read the definition with you for a minute, and I just want to be sure we're on the same -- working the same concept.

It's defined in the statute. It says, Correlative rights means the opportunity afforded, so far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of oil or gas or both from the pool.

Do you understand that?

A. Yes, sir.

Q. Now, when Texaco drilled wells in 12, you would agree with me that they were availing themselves of their opportunity to produce the reserves under that acreage, correct?

A. Yes.

Q. And whoever owned Section 1 at that time had an opportunity to drill wells on their tract; isn't that right?

A. Absolutely.

Q. And the fact that Texaco developed their acreage some time ago doesn't in any way mean that they should be penalized in the context of a penalty for having gotten out and explored and developed; do you agree with that?

A. I agree.

Q. Now, when we talk about correlative rights, we're talking about each owner of a pool; you understand that, do you not?

A. I think so.

Q. And what you're now here trying to do, if I understand it, is produce your just and equitable share of the reserves in the reservoir; is that correct?

A. Yes, sir.

Q. You realize that that term is also defined in the -- explained in the definition of correlative rights, that is, what is a just and equitable share. Do you understand that?

A. That's correct.

Q. If we look at the statutory definition, it says that a just and equitable share is the amount, so far as

can be practicably determined, and so far as can be practicably obtained without waste, substantially in the proportion that the quantity of recoverable oil or gas or both under the property bears to the total recoverable gas or both from the pool.

A. Okay.

Q. Now, you understand when we're talking about correlative rights, we're talking about your right to produce what is under your property.

A. That's --

Q. Do you understand that?

A. Yes, sir.

Q. All right. Let's go to your Exhibit 13, all right? Now, as we start this, you haven't seen any varying in the reservoir, have you, between your proposed location and the Texaco well to the south?

A. That's correct.

Q. All right. If we look at your Exhibit 13 we see that you have indicated there is a potential for a standard location in Section 1, 1650 from the common lease line. Do you see that spot, the northmost of the --

A. I do.

Q. And then we go down and we look at the closest well spot in -- to the north line in 12; that's also 1650 from the common line, correct?

A. That's correct.

Q. Now, let's assume we have comparable reservoir and comparable wells at each of those locations, all right?

A. Yes.

Q. And if both of those wells are producing, isn't it reasonable to assume that there ought to be a no-flow barrier at approximately the lease line?

A. "Reasonable" would be qualified with if it's constant thickness, constant permeability, if everything --

Q. And I asked --

A. -- was equal, yes, that would be --

Q. -- asked you to assume comparable reservoir and comparable wells?

A. Yes, sir.

Q. Now, if, in fact, we move the well, the northern well, 60 percent closer to the south line, that no-flow barrier is moving south; isn't that correct?

A. Under those same conditions, assumptions, yes.

Q. And under those assumptions, as it moves south it would, in fact, be recovering reserves not from your property but from the adjoining property; isn't that right?

A. That's correct.

Q. And you've already told me the Texaco well south of there is potentially draining your acreage, but you don't have any evidence that it is draining in Section 12?

A. That's correct.

Q. Isn't it fair to say that by moving to the location you're proposing, you're moving the no-flow boundary south and onto the Texaco acreage?

A. No, you have to use those qualifications. We don't know the nature of the drainage of 12F -- After seeing 12N, 12F had a very slight communication. It may be there's not a strong communication. But assuming all those perfect, exact properties, then yes, it would just move like I've shown here to a new midway point.

Q. And until you drill a well, you don't know what you're going to get in the reservoir, do you, Mr. Montgomery?

A. That's correct, we won't know what we'll be producing out of, we don't know the pressure or the communication extent.

Q. And so until we know, we have to just operate on some general assumptions; isn't that right?

A. That's right.

Q. And when we go back to the orders when prorationing was implemented in this pool and the original 650 -- 1650 setbacks were adopted -- You've read all the rules governing this pool; isn't that correct?

A. I have.

Q. And the Division determined that because of the

absence of data, the best thing they could do was go with a straight acreage allocation approach; isn't that right, in terms of prorationing??

A. Yes, but the prorationing is over.

Q. But isn't it true that today, until we have some better data, you can't tell me if there's anything better we can do to determine if there is drainage from the Texaco tract, just within the proximity of the wells one to the other?

A. No, I would say using the area that the wells may drain, not the proximity.

Q. How do you known the area your proposed well is going to drain until you drill it?

A. Well, what we do know is that the Morrow is variable. It is not an infinitely thin, as I would call it, pencil theory; it is not infinitely thin connecting these two wells.

So without better knowledge, and because initially, as you said, the pool was set up on surface acres, I determined, since it was multiple pays, surface acres would be the ideal way to do this, to calculate an overlap, to work through the fair and equitable question of that statute.

Q. At this point in time, do you know of anything that you can point to that would be more reliable in this

reservoir for assessing penalty than the proximity of the wells to each other?

A. Yes, I can.

Q. And what would that be?

A. That would be the areal extent of these reservoirs over this whole field. This whole field is areal extensive. It is not connected by infinitely thin reservoirs where you can just compare the distances. It's just not so.

Q. You don't know the areal extent of the reservoir under Section 1 till you drill your well, though, do you?

A. Even then you don't know the areal extent.

Q. All right. Now, when we look at your proposed recommendation, you're recommending a maximum of 15 percent penalty as the appropriate penalty; isn't that right?

A. That's correct.

Q. And you want to tie that to a calculated absolute open flow based on a deliverability test; is that not what you're recommending?

A. That seems fair to me.

Q. Now, have you -- How often do you recommend that deliverability tests be run?

A. My recommendation would be every six months, so that you could allow for the declining nature and so that you could not overly test the reservoir.

Q. Do you think the 15-percent penalty would effectively restrict the well you're proposing to drill?

A. If we decided to put this thing on compression and get after it, we wouldn't be able to do that. Yes.

Q. Have you made a comparison of calculated -- absolute calculated open flows, those initial pressure readings on wells in this reservoir, and compared that number to what those wells produced during their first year of production?

A. No, but I have general knowledge of this --

Q. Would it surprise you that the best wells in the pool only produce 50 percent of the calculated absolute open flow during the first year of production?

A. No, that seems reasonable, depending on the line pressure, whether they compress or not. There are a lot of options that operators can take to change and get away from the calculated open flow number that their reservoir seems to want to produce.

Q. So if a well can only produce 50 percent, the best wells in the pool, with their absolute calculated open flow, a 15-percent penalty based on an absolute calculated open flow would be no penalty at all, would it?

A. That's a big "if". I'm not sure the wells could only produce 50 percent.

Q. If you assume that as a correct statement --

You're an expert, you've been qualified as such. I'm asking you to assume.

A. Okay.

Q. When you put a well on and it can produce only 50 percent of what you can measure the production -- the productive capability of that well has to be, it can only produce 50 percent of that, a 15-percent penalty on the higher number is no penalty at all, is it, if those assumptions are true?

A. How can you assume something that doesn't seem reasonable?

Q. I ask the questions here.

A. I'm sorry, but --

Q. If you want me to restate the question, I will do it.

A. Go ahead.

Q. But the question is, if when you measure a well's ability to produce and you get a number, and then you determine and discover that the well's only produced half of that during the first year of production, the period you want to use before you test again, a 15-percent penalty is no penalty at all?

A. We're talking about six months, not a year.

Q. All right, let's -- we'll use six months.

A. Something is wrong with your calculated overflow

or your productive capabilities if that's all you can do. But if -- if, if, if -- you're right, that wouldn't even have any impact at all.

Q. And if the poor well is only producing approximately 20 percent of the calculated absolute open flow, you really have no penalty at all?

A. You've really got some screwed up data.

Q. Now there's some conditions on this penalty that you're recommending, if I understand it.

First of all, we have to be in the same zone; is that -- There would be no penalty if the well you propose is not in the same zone as the Texaco well; is that what you're suggesting?

A. I'm suggesting that there could be a stray sand, and it clouds the calculation, makes it less likely to even have a penalty if you have these stray sands. There's a behind-pipe sand in the 12F well that we may eventually produce.

So it's not just the productive sands, but -- possibly productive. It's a difficult question. That's all I was trying to say.

Q. If the Levers Number 2 well in the north half of 12 does not have the A sand open, and you complete in the A sand, would you believe a penalty should not be applied to your well?

A. No, I think it would be fair to apply the same 85-percent penalty.

Q. And when we're talking about zones, are we talking about the whole Morrow interval, or are we talking about the individual sands, the A, the B?

A. The whole Morrow is tough, because we might find a stray that's not included in that well. But it would be -- for simplicity, it would be better to say that -- the Morrow interval.

Q. Now, if you make a poor well at your location and can only produce a million a day, is your recommendation that if you fall below the million there's a floor under the penalty; isn't that what I understood you to say?

A. I believe that any penalty based on testing of calculated open flow with respect to offset drainage has some ending point inherent based on -- There comes a time when the well may be so marginal that it's hard to shut it in and get it back.

If it loads up with water and you have to swab it, that costs money. If it loads up with water and dies, you've wasted reserves just because of the -- trying to be fair and equitable with the drainage. And yet, when you get to these lower numbers there's less drainage also.

So I think there's some limit. I throw out a million a day as something reasonable for this high-perm

environment, potentially high-perm environment.

Q. Do you think your well should be guaranteed a million a day, even if it's in a poor reservoir and it has to drain Texaco to make that million?

A. Yes, I do. If we can't produce a million a day, it's going to be hard to make an economic well, the way these may decline. I'd have a hard time giving a penalty that seems so burdensome and so greedy that we were not able to make an economic well and produce significant reserves that we think exist in our proration --

Q. Would a million a day be an economic well?

A. The first day, you'd make money for sure. But if they decline at 70 percent, you would have lost money on your $750,000 in a big way.

Q. You're asking the Division to guarantee an economic well?

A. No, I'm -- the opportunity to drill one, though, to not make the burden so high that we have to just back off.

Q. And you would back off if you were not guaranteed a million a day?

A. I don't know, I can't speak for my management. But I would have a hard time going back and saying, Let's go drill this well, we've got this penalty and all we can produce is a million a day.

Q. Now, you have testified, as Mr. Williams did yesterday, that we have effective 320-acre development in this reservoir; is that right?

A. It seems to me that the OCD has put it upon the operators to develop this on 320. I see the historic development is on 320. I just -- It seems obvious that this an effectively 320-acre developed set of sands in the Morrow formation.

Q. There is nothing in the rules, however, that says 320 is the spacing unit; you're just given an option to put a second well on 640?

A. Not in the current rules. There was at one time.

Q. And the current rules are the rules we're dealing with, correct?

A. We're dealing with the whole history of the development of this field, in my opinion.

Q. Not just the current rules?

A. Oh, absolutely the current rules, is why we're here today.

Q. And that's what we're looking at, isn't it true?

A. Yes, sir.

Q. And those current rules provide for a setback from the common lease line of 1650 feet, correct?

A. That's correct, from the outside boundary. There's no legal location in the 320 unit that you can do

that with, you understand.

Q. But you are still -- Because of the unit, because of just the facts of what we're dealing with, you're 60-percent closer to that south line than you would be if you were back 1650 from it?

A. Yes.

Q. And if we had a penalty of 60 percent, and you had a well that could only produce 20 percent of its calculated open flow, you would have no penalty at all; isn't that right?

A. That's those big "ifs" again, but I follow your logic and I suppose that would be right.

MR. CARR: That's all I have. Thank you.

EXAMINER STOGNER: Thank you, Mr. Carr.

Mr. Bruce, redirect?

REDIRECT EXAMINATION

BY MR. BRUCE:

Q. Mr. Montgomery, Mewbourne doesn't have the option of putting another well in Section 1, does it --

A. No.

Q. -- to get two wells on 640?

A. That's correct. We have the 320-acre opportunity now to develop this.

Q. Now, suppose your well did come in at 2 to 3 million a day, and assuming what Mr. Carr said, you can

only -- the deliverability is really only 50 percent of that --

A. Uh-huh.

Q. -- 2, 2.5 million a day, and then a 60-percent penalty is assessed on that, or more. Could you in good conscience recommend that that well be drilled to your management?

A. No, I could see a condition where the rate was so low, and with offset data showing that sometimes these wells come on at decent rates and decline at 70 percent, you just can't make any money if they decline that fast and you don't get to start high enough and be competitive with what seems fair.

Q. Do you think if you had to produce at, say, 500,000 a day, that you could recover this estimated 3 to 6 BCF under your unit and still compete with the Texaco well?

A. No, that well is producing 4 million a day, and I fail to see why we can't get close to that.

Q. You would be producing at one-eighth of the Texaco rate?

A. Yeah, 85 -- We might take a cap of 3.5 million a day, and that would seem to be reasonable with the areas I talked about, if it's not a calculated open hole percentage. There are other ways to look at this.

But if it's too restricted, the possibility

exists that we would make a poor well economically after spending $740,000 and...

Q. 500,000 a day would, in effect, be -- you could say, the 85-percent penalty?

A. Depending how you --

Q. Compared to --

A. -- calculations, right. It would...

Q. Now, Mr. Carr is fond of quoting the definition of correlative rights, and I think you heard him say it's the opportunity to produce the reserves. It doesn't guarantee that you get everything under your section or half section or quarter section, does it?

A. It's too heterogeneous to even predict that you would.

Q. But the definition itself is the opportunity to produce?

A. That's the way -- Yes.

Q. Okay. Looking at Exhibit 8, the new Texaco well in Unit F, Section 12, Texaco chose that to drill -- They could have drilled further north, couldn't they?

A. They could have drilled anywhere on that section. Had they got approval, they could have drilled up to 1650 south from the north line, I guess, administratively, but they did not --

Q. They could have drilled it -- what? Another 800,

900 feet to the north?

A. That's correct. I believe they wanted to stay south, near their known production.

Q. They stayed south near the well in 12N --

A. Yes, they did.

Q. -- and they stayed close to that Devon well in 11P; is that correct?

A. I can't speak for them, but it looks that way on the map, that they expected to have better quality rock at that location. That's why they drilled that location. We can assume --

Q. So they didn't have any problem drilling, apparently, close to two wells that have, combined, produced 9 BCF, have they?

A. That's correct.

Q. And I think what you said is that Mewbourne's well might have some effect on Texaco acreage, but then again it might not?

A. That's hard to say at this point in time.

Q. But at this time there is a chance that Texaco is already draining your acreage?

A. Right, that argument works both ways. Either it is or it isn't, and there's many ramifications.

MR. BRUCE: Thank you, that's all I have, Mr. Examiner.

EXAMINER STOGNER: Any other cross-examination?

MR. KELLAHIN: No, sir.

EXAMINATION

BY EXAMINER STOGNER:

Q. You stated that you've reviewed the past rules and the history of this pool?

A. To some degree. I have them with me now, and I have read through them to some degree, yes.

Q. When was it prorated, the pool?

A. I do not have that in front of me, I'm sorry.

Q. Well, in your -- Okay.

A. I mean, I -- and I'm not even sure when it was exactly prorated. I remember --

Q. But it was prorated, right?

A. -- that at one time. I remember reading that there were proration things in the 1970, 1972, initial -- whether it was the preliminary or the final, that it was under a time where proration was necessary, and then at some point proration did cease. It's not on the proration schedule now. I don't have a clear history of the proration timetable.

Q. Okay. Do you know why it was prorated?

A. My guess -- Well, I don't know why. I would say there was probably a supply-and-demand equilibrium of gas in the country, and that if you allow one producer to

outproduce another because they are sister companies to the pipeline or they have a different pipe, you could have correlative-right problems, you could have a real problem with that.

But once the supply-and-demand equilibrium was restored, everybody -- we needed all the gas we could get. If everybody was allowed to produce wide open, that would also be fair, because then you would be producing as God had made your formations beneath your acreage.

But I -- That's not legal, I --

Q. Okay.

A. -- my -- sense of mine.

Q. What are some of the factors other than pipeline take?

A. Correlative rights, as we talked about, that works all in there, I would assume, would be important in proration.

Efficient recovery, so to not prevent waste. In certain places you can produce too quickly in -- maybe not in volumetric reservoirs like this but -- So that the State can have a way to prevent waste, would be another reason. I may be missing some others.

Q. You've reached on the protection of correlative rights, and I want to touch up on that.

A. Okay.

Q. What are some of the factors that would allow prorationing to offset this correlative-rights issue that you can think of, like -- or would give advantage of one operator over another?

A. Proration might be used if ownerships varied, if one operator had some kind of advantage that was unfair and the State said, This is a way we can help make it more fair. There may be more than one ways. And ownership would be involved that -- being correlative rights of working and royalty owners.

Q. Wouldn't locations be one of the factors?

A. Yes, sir.

Q. And how about acreage differentials?

A. Yes, sir, assuming it's a good assumption to make in a lot of cases that acreage is directly -- surface acres is directly related to gas in place and those thing. And so when there's proration, when there's reasons for proration, the surface acres should come into play, I think.

Surface acres, now, the reason -- the problem with us having a 320 out of a 640 is diminished quite a bit, I think, when proration was lifted. I think that was a very key to that one. Too close to the line still is definitely in play.

Q. Okay. Now, when you said that prorationing had

ceased or stopped -- what was your words?

A. I probably used -- I don't remember. I just don't think that there is proration now, as far as the definition that there is a -- it's a prorated field set up with schedules that I can look on there and see the factors that each well is producing based on, you know, the proration rules.

I'm not an expert on New Mexico proration.

Q. Okay. Well, in fact, was it suspended or stopped?

A. I don't know.

Q. Okay. Whatever the case, wouldn't that be a -- would this be a good instance to perhaps start it up again?

A. I don't think so. Proration, for the reasonings that I see for prorationing, which include correlative rights, prevention of waste, would not apply here, because the field is effectively on 320s.

It's not a 640-developed field historically. There are wells on most every 320 out there. Everybody's able to produce their share competitively. Whatever you can do to go out and do it, drill your well, your one well per 320, compress it if you want to, whatever.

The proration would stop a lot of that or could change a lot of that, and I -- since the supply-and-demand equilibrium is not there, and as long as we can protect

correlative rights and prevent waste, I think the acreage component has diminished substantially.

I believe it's the same royalty owner to the north, the 320 to the north is a -- so that made me feel good.

Q. Okay. How about the present rules? You said that --

A. Yes.

Q. -- you could only drill one well on your 320?

A. I don't know. I'm not an expert on the rules. I guess you could get a simultaneous dedication. There's ways to bring to the Commission -- ways to work with the rules.

But that's the way I generally interpret the rules, that you are able to drill wells on a 640-acre-spaced field, 1650, and there's some other requirements about 330 to the quarter-quarters or something, and that in the history of the rules they went to 320, but when they came back, and where we are now, the way I understand it, they incorporate those findings that say, we think findings -- they list them all, three, four, five, six, there's several of them, that there are many pays, it's heterogeneous, that you will -- you will recover more gas if you go on and drill 320s.

So they almost encourage that development, the

way I interpret those. I'm not a legal expert.

Q. Okay, I'm really not talking about the findings. I'm talking about the rules that are in place now.

A. Right, the rules are 640 and 1650.

Q. Right.

A. And --

Q. But what would prevent you from putting two wells on a 320?

A. I guess you'd have opposition from other partners, you'd have the problem of, say, augmenting the risk, that you'd share reserves and shoot yourself in the foot and have, potentially, if it's not as thick and productive as other sections to the south, you might drill wells unnecessarily, spend too much money, let's say, for the recovery of what one well can recover and has -- the Commission has shown was reasonable to recover, the 320 approximate acres.

There may be some other reasons, but those are ones that I have a problem with as far as trying to drill on 160s or two wells per 320 or -- Certainly if the other 320 to the north came up, I would say that someone should be able to drill a well up there.

Q. Under the present rules, do you know you can drill two wells on that 320?

A. I don't doubt that, but I don't know.

Q. But what I'm hearing from you is that you would not drill two wells?

A. I would not recommend it, I would not recommend it at this time. I'm afraid things are thinning that way and that the recoveries may not be the same as to the south and that you may be interfering with each other and, in effect, making two wells that lose money instead of one well that makes money in the Morrow.

I have no problem with other zones up the hole, but in the Morrow I think one well is sufficient.

Q. If you were allowed to drill that well, would you object to Texaco drilling 660 off your --

A. If we did not have a penalty, I would not -- I think we would be silly to object. I would recommend we not object. I would have a problem with them having two wells going at the same time, I suspect, but it might be that we could negotiate something like that with Texaco.

Q. Were you involved in this pool when prorationing was active?

A. I don't believe so. I became involved in this pool only very recently, late last year.

Q. So you wouldn't know if there was any additional acreage factors instituted on any of the existing proration units that had two wells?

A. No, I'm not familiar with anything like that.

Q. Are there any other acceptable locations within this 320 acres that would be 1650 off of that southern boundary, that would essentially give Mewbourne the opportunity to produce, according to what you have investigated, the same reservoir options in which you all are hoping to get at this particular location?

A. I don't believe so. There are other locations to the south, but not 1650 from the south line.

I'm very much concerned about the -- what I call 1P, the old Fasken well that made 340 million out of the Morrow, and the general mapping, the geology of the way we interpret this, that going north the risks are just dramatically increased that you will get a well you're not happy with economically and that -- there are reserves in that 320, but the optimum location is in that south portion, the location that we have put forth -- or the one right next to it in V, maybe, 1V, 40-acre offset to the west.

I believe we -- Never mind.

Q. Now, you were talking about the Fasken well. You're talking about the one that's in Section 1, or was in Section 1?

A. In 1P, it did produce out of the Morrow. The middle Morrow green, I think, was the only zone really open several -- several years ago, and has been plugged, made

about 340 million over some period of time.

EXAMINER STOGNER: Any other questions?

MR. BRUCE: No, sir.

EXAMINER STOGNER: You may be excused.

THE WITNESS: Thank you.

MR. BRUCE: I have nothing further in this case, Mr. Examiner.

EXAMINER STOGNER: Mr. Bruce rests at this time.

Mr. Kellahin?

MR. KELLAHIN: Thank you, Mr. Examiner.

Call Dexter Harmon.

DEXTER HARMON,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Harmon, would you please state your name and occupation?

A. My name is Dexter Harmon. I'm the exploration manager for Fasken Oil and Ranch, Limited. I'm a petroleum geologist.

Q. On prior occasions have you testified before the Division --

A. Yes, I have.

Q. -- and in the capacity of a petroleum geologist?

A. Yes.

Q. And where do you reside, sir?

A. Midland, Texas.

Q. How long have you been involved on behalf of Fasken in analyzing the opportunity to drill a deep gas well in this particular area?

A. My first look at it on behalf of Fasken was in January, late January, when Mewbourne proposed the well to us.

Q. As a result of that proposal, did you assimilate all the available geologic information and make an analysis of that information?

A. Yes, I did.

Q. Did you have access to the same kinds of information that Mr. Williams utilized in his presentation?

A. We actually had more information than Mr. Williams utilized. We had a 3-D seismic survey over the section that we could use.

Q. As a result of your study and analysis, have you come to certain geologic conclusions about the optimum position in the proposed nonstandard spacing unit in which to locate a well?

A. Yes, I have.

Q. Is that a location different than the location proposed by Mewbourne?

A. Yes, it is.

Q. Is it the location that we have referred to on some of Mewbourne's map as the Fasken location?

A. Yes, it is.

Q. Have you obtained the support of any of the working interest owners in the spacing unit for what we've characterized as the Fasken location?

A. Yes, we have. All the working interest owners would like to go in on that well, except for Mewbourne.

MR. KELLAHIN: We tender Mr. Harmon as an expert petroleum geologist, Mr. Examiner.

EXAMINER STOGNER: Any objections?

MR. CARR: No objection.

EXAMINER STOGNER: Mr. Harmon is so qualified.

Q. (By Mr. Kellahin) Let's take Exhibit Number 1, take a moment and use it as a reference map, Mr. Harmon.

If you'll start with an explanation, give us an understanding of the legend at the bottom in terms of the color code and how you've identified the wells.

A. Exhibit 1 is a production map of the area, centered on Section 1 of 21 South, 25 East.

The color codes are according to the fields that the wells are placed in, and each well above it has the operator name of the well, and then below it or to the side of it the cumulative production from the well, how many

years it took to cum, and current rate and, if there's not a current rate, the plug-and-abandonment date.

Q. At the proposed Fasken location, what have you determined to be the various formations or reservoirs that have a potential to be developed at that location?

A. We see two potential reservoirs, the Morrow, which we've been talking about, and we also see potential in the Cisco formation, which produced to the northwest in the Springs-Upper Penn field.

Q. When you compare the Fasken proposed location to the Mewbourne proposed location, do both locations have the opportunity to access the same potentially productive reservoirs?

A. No, we don't think that the Cisco potential exists in the Mewbourne location at all.

Q. When Mr. Williams was describing the Morrow reservoir, he subdivided it. And we have his presentation. I've shown you a copy of his cross-section, and he subdivided it and correlated it in a particular way.

Let me start with you, Mr. Harmon, and have you describe, first of all, whether or not there are any depositional differences as we move from the lowest Morrow to the highest Morrow in this area.

A. Okay. In my opinion, the lower Morrow sands in this area are channeled sands, and they trend in a north-

to-northwest to the south-to-southeast direction.

The middle Morrow sands, that he refers to as green sands, in my opinion, are more marine-influenced sands, and they tend to trend at a perpendicular direction to the lower Morrow sands, being beach sands and near-shore sands and tidal bars and things like that.

Q. Let's take a moment and put your cross-section up on the board so -- and give the others an opportunity to unfold it so we can talk about it.

EXAMINER STOGNER: While you're doing that, let's take about a five-minute recess.

MR. KELLAHIN: All right, sir.

(Thereupon, a recess was taken at 9:44 a.m.)

(The following proceedings had at 9:54 a.m.)

EXAMINER STOGNER: Hearing will come to order. Mr. Kellahin?

MR. KELLAHIN: Thank you, Mr. Examiner.

Q. (By Mr. Kellahin) Mr. Harmon, you were describing before the break that there are two different depositional environments that affect the Morrow. You were identifying the lower Morrow as being a channel -- the lower portion of the pool, if you will, to be a channel system and the upper portion of the pool or the reservoirs, if you will, to be a beach depositional environment?

A. Yes, that's correct.

Q. Separate out the areas of the pool where we have those two different depositional environments.

A. On Exhibit 2, cross-section A-A', the lower Morrow sands are colored in orange and brown, and they're below the top of the lower Morrow, the stratigraphic datum this cross-section is hung on. The middle Morrow sands are above that, and they're colored in green, blue and purple on this cross-section.

Q. Is the top of the lower Morrow the point of separation between the two depositional environments?

A. Yes, I believe it is.

Q. Let's identify the cross-section wells, the orientation in the wells you've selected to display on the cross-section. This is a stratigraphic cross-section?

A. It is a stratigraphic cross-section.

Q. Take us through the wells.

A. Starting on the A' side of the cross-section, we have the Texaco Levers Number 1 well. I've got a resistivity log, the porosity log, and below that a scout ticket for the well, and then below that a production curve of the well.

The Texaco Levers Number 1 well was perforated and completed in the middle Morrow green and blue sands in this cross-section, and the lower Morrow orange and brown sands. And that well produced from those sands up until --

you can look on here -- about 1987 or something like that.

Q. There's a production plot at the bottom of the log section on the cross-section that gives that information?

A. That's correct. You can see where the well went off production. And then they came back up and they perforated this upper Morrow A sand that Mewbourne refers to. And that's where the current production is coming out of with that well.

Q. You're referring to the top red dot on that log section, as referring to the upper --

A. That's correct.

Q. -- A sand interval?

A. Yes.

Q. And that's where that well is currently being produced from, or is that in addition to the other perforations?

A. No, that's the only thing that's open in the well right now.

Q. All right. And the vintage, then, of that well is approximately what, sir?

A. The upper perfs?

Q. Yes, sir.

A. About 1991, it looks like, from that --

Q. All right, let's go to the next well, the

Levers -- what I've called the Levers 2 well.

A. The Levers Number 2 was drilled in 1996 by Texaco, and discussions with them were that they perforated the lower sands -- you can see the perforated interval on the scout ticket -- and found a bottomhole pressure of around 1300 pounds. And this other well had been abandoned -- The Number 1 well had been abandoned around 450 pounds. So the lower Morrow sands were depleted, but not as much as the abandonment pressure of the Number 1 well.

And then apparently they completed these middle Morrow sands, and they've got the good well that they have today out of those sands. And what they've done in their completion technique is to put a one-way valve between these two sands, to where the lower Morrow sands will not produce any gas until the pressure in these two sands equalize, so that will be around 1300 pounds. And then the lower Morrow sands ought to be able to deliver and support production from the middle Morrow that's currently being produced.

Q. Geologically, does it appear reasonable to conclude that in the orange and the brown sands, these lower Morrow sands, that the Levers 2 well was completed in a partially depleted reservoir and that depletion is attributable to the Levers 1 well?

A. Yes, it is.

Q. When you look at how you have correlated and subdivided the Morrow, have you and Mr. Williams used the identical same correlation markers?

A. No, we correlate the wells differently.

Q. All right.

A. On his cross-section, the well on A-A', the first lower Morrow sand that he comes to he doesn't have labeled, but I have that labeled as my orange sand, which is -- and then the -- and the second well is my brown sand here, which he calls his orange sand. So we correlate these things differently.

Q. So as the Examiner reviews the cross-sections, he needs to take care that there is a difference in the way the sands are correlated and identified?

A. That's correct, for the lower Morrow and also for the middle Morrow. I break the middle Morrow up into individual sands, as opposed to lumping them together.

Q. When Mr. Williams described that Morrow interval, I think he defined it with the green sand color code?

A. That's correct.

Q. So that green-sand color code, for him, has been subdivided by you into three different intervals?

A. His green is actually the green and the blue combined.

Q. All right.

A. He left out the purple.

Q. Okay. Are there any other material differences between the two interpretations that you need to bring to the attention of the Examiner?

A. Not at this time.

Q. All right, sir. As part of your study, did you prepare a structural analysis of the Morrow reservoir?

A. I did.

Q. In addition, have you prepared for examination by the Examiner, isopachs of the various intervals within the Morrow that correspond to the color coding on your stratigraphic cross-section?

A. Yes, I have.

Q. In addition, on your structure map have you interpreted insofar as it's relevant to this spacing unit information from 3-D seismic data?

A. Yes, we have.

Q. And has that interpretation been made with the assistance of a geophysicist?

A. Yes.

Q. And is the geophysicist involved in that process Mr. Lou Lint?

A. Yes.

Q. And Mr. Lint is proposed to be a witness following your testimony?

A. That's correct.

Q. Do you and Mr. Lint concur on the location, the orientation and the other components of the faulting system as described on your Exhibit Number 3?

A. Yes, we do.

Q. Let's go to that description. If you'll look at Exhibit Number 3, identify and describe that display.

A. Exhibit Number 3 is a structure map on the top of the lower Morrow. This is also the base of the middle Morrow, which is a thick shale interval sitting right above the top of the lower Morrow. That makes it a very good seismic event on our 3-D seismic that's easy to pick and follow throughout this area.

The blue outline on this map represents an outline of where we have the seismic-guided structure, and everything outside of the blue outline is subsurface controlled structural picks.

You can see on the map a major north-south fault separates the Fasken location from the Texaco location -- I mean from the Mewbourne location -- and it looks like there's at least 100 foot of throw on that fault.

Q. All right, let me ask you this: The faulting affects what portion of the Morrow reservoir?

A. All of it.

Q. The faulting occurred after --

A. After deposition.

Q. -- deposition of both the lower and the middle Morrow?

A. Yes, that's our analysis.

Q. And between the Fasken location and the Mewbourne location, what is the distance of vertical displacement of that fault that is located between the two locations?

A. We think it's at least a hundred foot.

Q. And that is sufficient to display all the reservoirs that are a topic of exploration by both companies?

A. Yes.

Q. Is there a water component to the reservoir under your analysis? Mr. Williams described for us a concern about water. Have you identified a water component to the reservoir, and is there a concern about water when you look for Morrow production here?

A. Yes, I concur with his conclusions.

Q. Mr. Williams acknowledged that there's a risk of wet Morrow sands as you move east and downdip. Is that the same direction of structure that you've interpreted on your map?

A. Yes, it is.

Q. So as you move east, you're moving downdip?

A. That's correct.

Q. Describe for us the significance of the fault between the two proposed locations. What does that mean to us when we begin to look at the sand reservoirs?

A. Well, the Mewbourne has a much lower structural position, and therefore closer to any gas-water contact that might be present and would have less of a chance of recovering any -- less -- it would be -- recover less reserves at that location.

Q. When you examined the location of the faults, there is another major faulting event that affects this spacing unit; is that not true?

A. That's correct.

Q. And the line that I'm describing is the one that runs in the section to the southwest, Section 11, and it runs in generally a southwest-to-northeast direction. But then as it approaches the southern corner, the southwest corner of Section 1, it terminates; do you see that?

A. Yes, it dies out.

Q. Are you satisfied that it, in fact, terminates?

A. Yes, we are.

Q. What causes you to reach that conclusion?

A. The seismic that we've studied.

Q. You saw the structure map and the location of a fault that Mr. Williams displayed on his exhibit?

A. Yes, I did.

Q. In fact, you have a copy of his structure map before you, do you not?

A. I do.

Q. Prior to yesterday, you had had a meeting with Mr. Williams on February 26th, did you not?

A. We did.

Q. And at that meeting Mr. Williams showed you a structure map and the location of a fault, did he not?

A. He did.

Q. Did the location of the fault between the February 26th meeting and the hearing yesterday change under his interpretation?

A. I think he had two different interpretations at that meeting. One, his fault went north of the old Fasken well in Number 1; and the other, the fault went south of it. And he called it his risked and unrisked maps.

Q. Okay. The map we saw yesterday, the one we have before us, shows the fault northwest of the Fasken location; the alternative analysis that you saw shows the fault separating the two wells?

A. Right.

Q. Based upon the seismic information, are you satisfied that you can reach a geologic conclusion of reasonable certainty that there is not a fault that separates out the Fasken location from the reservoirs that

are being produced by the Texaco Levers 2 well?

A. We see a north-south fault. This area is structurally more complex than Mr. Williams' structure map, and I've described that north-south fault already.

Q. All right. So when we look at the Fasken location, you'll be in the same structural configuration that is not separated by a fault system with the Texaco Levers well in the adjoining section to the south?

A. That's correct.

Q. And that's not true, then, of the Mewbourne location?

A. That's correct.

Q. Let's turn now and look at the various isopachs that you've prepared. We're going to start with the lowest interval mapped, Mr. Harmon.

Again, so that the record is clear and the Examiner has an opportunity of comparison, when we look at what you have coded on Exhibit 4 as your brown sand, is there a corresponding analysis by Mr. Williams as to this sand interval?

A. He isopached the lower Morrow brown sand, but we don't necessarily correlate them the same from well to well.

Q. All right. Give us a short summary of your conclusions with regards to your Exhibit 4.

A. Exhibit 4 represents an isopach map of the lower Morrow brown channels. You can see the northwest-to-southeast depositional trend. This sand has good permeability in places and it's tight in others. There's a lot of variability between the net porosity and the gross sand. This is a gross sand map.

The location for the Mewbourne location and the Fasken location are both represented on here in Section 1. They show about the same thickness of sand. However, remember that the Mewbourne location is on the downthrown side of the fault.

Q. So when we set aside for a moment the faulting issue that affects the spacing unit, the Fasken location appears to be well within the 35-foot contour line, and the Mewbourne location is within that same contour line but closer to the edge on the eastern boundary?

A. On this interpretation, this map, that's --

Q. All right, when we look at the brown sand is this a major for your well or for any of -- either well location?

A. It was a major producer in the field. Like I said, the Number 1 Levers was depleted down to 450 pounds. The Number 2 Levers had 1300 pounds in it. So as we move north in this sand, we expect more pressure and it is a target.

Q. All right. So the advantage here, then, is what, sir? Over the Mewbourne location?

A. To stay on the upthrown side of this and --

Q. -- farther away from potential drainage?

A. Right.

Q. All right, let's turn to the next exhibit, Exhibit Number 5. Again, so that we can make contrasts and comparisons to Mr. Williams' presentation, your Exhibit 5 is identified by you as an orange sand. Do you have a corresponding map by Mr. Williams?

A. No, he did not present one.

Q. All right. Identify and describe your Exhibit 5.

A. It's really the same story as the brown sand, only it's a more narrow, thinner channel. Depositional strike is a little more northwest than the other one.

Both locations look good for sand thickness. However, the Mewbourne location is less attractive because it's on the downthrown side of the fault and thus makes it closer to water, potential water leg.

Q. All right, sir. Let's turn to the next display. We're moving out of the Morrow sand channel deposition, and we're now moving up into the three displays that describe potential in a different depositional environment; is that not true?

A. That's true.

Q. In order to have some opportunity of general comparison, which of Mr. Williams' maps would be an accumulation of your green and your blue map? He's got it on one of his exhibits, I think.

A. Yes. His green map lumps my blue and green maps together, which would be Exhibits 7 and 8.

Q. Let's have you look at 7 first and have you identify and describe that display.

A. Exhibit Number 7 shows a gross middle Morrow blue sand map. General depositional direction is east to northeast.

Q. What's the explanation to the fact that this sand is now oriented differently than we saw the channel systems of the lower Morrow?

A. These are marine-influenced sands, and they tend perpendicular to the channel systems. They tend to have a shingled depositional look on logs. Practically anyplace you drill out here, you'll get middle Morrow sands. And they don't correlate north-south very well, but on an east-west direction, you can correlate the individual sands.

Q. This is one of the sand packages that's being produced by the Texaco Levers 2 well?

A. Yes, it is.

Q. Your interpretation places that in a different part of the system from the system that you're seeking to

access at your location?

A. That's correct.

Q. At your location, you anticipate to have gross Morrow blue sand, and at the Fasken location it is not present?

A. At the Fasken location we predict a lower Morrow blue sand, and at the Mewbourne location we don't have one mapped.

Q. Okay. Is this a reservoir that's also affected by the fault?

A. Yes, the fault cuts all sands.

Q. Let's turn now to Exhibit Number 8 and have you identify and describe Exhibit 8.

A. Exhibit 8 is more of these marine-influenced sands. You can see a couple of tidal bars on this that don't have the lateral extent of a channel sand, but they do trend in a perpendicular position to the marine sand deposition. At our location we predict we'll hit a lower Morrow green sand, and we don't have one mapped at the Mewbourne location.

However, there are several more sands, lower Morrow sands, that I haven't mapped here, and we do predict that their location will hit some, but not these particular sands.

Q. All right. Let's look at the final map. You've

got a purple sand map that Mr. Williams did not include in his package. Let me have you identify and describe this one.

A. This is Exhibit Number 6. It's the lowermost sand I've colored on the cross-section. It comes into play south of Section 1, and it's productive in five wells on the map.

We see it trending through the Mewbourne location, and we'd pretty much be off-trend for it at the Fasken location. However, it hasn't proved productive in that particular trend we have mapped through their location right now.

Q. Neither of the two Texaco wells have been perforated in this purple sand package?

A. No, they haven't.

Q. When we look at the Morrow opportunity, summarize for me, Mr. Harmon, what you see for benefit of the Examiner as to be the preference for the Fasken location over the Mewbourne location.

A. We think we'll get similar amounts of sand at both locations. However, their location is on the downthrown side of a major fault. It thus places it closer to any gas-water contacts and thus gives you more risk for the possible reserves you might obtain at that location.

Q. To complete the analysis, let's have you look at

the B-B' cross-section, which is Exhibit Number 9.

At this point we're going to move up into the Cisco analysis, are we not?

A. That's correct.

Q. This is a cross-section -- or we -- I can't see that far, Mr. Harmon. Is this a -- It's a structural cross-section?

A. This is a stratigraphic.

Q. Stratigraphic cross-section.

A. Hung on top of the Cisco.

Q. All right.

A. In this cross-section you can see several productive Cisco wells on the left-hand side of the cross-section. The first well has made 1.4 BCF and the second well made 9 BCF out of the Cisco. The perfs are in the very top, and this just demonstrates that there's Cisco gas in the area.

Q. When we get to the offsetting well that was drilled in the section to the west, which is that well?

A. It would be the third well on the cross-section?

Q. How is it named?

A. That is the Continental Levers Federal Number 2. That well was also perforated in the dolomite interval at the top of the Cisco and produced some gas. We have a gas show there, in a downdip position.

Q. If you as a geologist do not have the benefit of 3-D seismic information and are using conventional log data to try to locate a well to take advantage of any Cisco production, are you able to do that?

A. I don't believe so.

Q. And that's what this cross-section illustrates?

A. Yes.

Q. You simply can't figure out where to put your well in the spacing unit to take advantage of the Cisco?

A. Yeah, you need to be on the very top of the -- You can't identify it from subsurface.

Q. Give us a general introduction to your strategy and your methodology for identifying the Cisco potential in the spacing unit.

A. We hired Lou Lint to -- a consulting geophysicist, to interpret this, because Lou had originally planned and shot this thing for Cisco when he was working with Matador, and he has since gone out as a consultant. So he was familiar with the area, and we needed a quick turnaround on someone that was familiar with it, so we hired Lou to interpret this for us.

Q. When you as a geologist are looking for Cisco opportunity here, tell me what you consider to be the trapping mechanism or the container by which potential Cisco gas is held.

A. It's mostly a structural play. You need to have a little closure and -- on the order of 50 foot or so.

Q. And that's how the seismic information has been utilized, then, is to try to find a high position of Cisco reservoir that has a structural component to it?

A. Yes.

Q. And within that structural crown or mound, would that constitute a trapping mechanism for any hydrocarbons?

A. Yes, it would.

Q. In addition to that, then, the seismic information was utilized to definitively locate the faulting system that affected all the Morrow reservoir?

A. That's correct.

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

We move the introduction of his Exhibits 1 through 9.

EXAMINER STOGNER: Any objections?

MR. CARR: No, sir.

EXAMINER STOGNER: Exhibits 1 through 9 will be admitted into evidence.

Thank you, Mr. Kellahin.

Mr. Bruce, your witness.

MR. BRUCE: Just let me get these in order, Mr. Examiner.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Harmon, who did you work for before Fasken?

A. Mewbourne Oil Company.

Q. As a petroleum geologist?

A. District geologist.

Q. Now, looking overall at your maps, I think you said you began preparing them in late January. Do you mean January of 1997?

A. Yes.

Q. You hadn't looked at this area before then?

A. No.

Q. How long has Fasken owned an interest in Section 1?

A. I'm not sure. It was back in the Seventies.

Q. Okay. Over 20 years?

A. Yes.

Q. And did most of the development in this Catclaw Draw-Morrow Pool occur during the past -- during the Seventies and Eighties?

A. I believe so.

Q. When did you become aware of Texaco's new well in Unit F of Section 12?

A. When Mewbourne proposed the well to us.

Q. You weren't aware of it before then?

A. No.

Q. Now, are these your original maps, or do you have any drafts other than these?

A. These are my original maps.

Q. No drafts, no -- You don't have anything else, preliminary to this?

A. These are the original ones that I showed Mewbourne at our meeting on February 26th, and these are the only maps I prepared.

Q. Now, let's get to some of these maps, and I'll try to go through them in order.

Your production map, looking at that, the Conoco well in the southeast quarter -- well, whatever unit that is, the southeast quarter of Section 2, did that produce in the Morrow?

A. They had several tests in the Morrow on that well.

Q. What did it produce?

A. It did not produce anything down on the pipeline; they had several tests.

Q. Okay. And so this figure here for production is from the Cisco/Canyon?

A. That's correct.

Q. Does the Cisco also produce water?

A. It sure does.

Q. Do you know how much water this well produced?
A. I don't know offhand.
Q. What is the current -- What was that well used for after it produced?
A. I understand it was a disposal well.
Q. Saltwater disposal?
A. Yes.
Q. How much water was disposed into that well?
A. I don't have the figure.
Q. Do you know if it was a minor amount, substantial amount?
A. I think it was millions of barrels.
Q. Is it still being used for water injection?
A. I don't know.
Q. Has Fasken looked at how far water may have -- the injected water may have spread from that well?
A. We don't feel like the injected water would spread into the top of the structure.
Q. Also on this production map, looking at the next township to the east in the same pool, it's just off the south edge of your map, Section 19, which would be 21 South, 26 East, in the northwest quarter there's a well; the Nanbet well is the name. Do you know -- have an idea how much that well produced?
A. I'm not familiar with that well.

Q. Let's move on to your Exhibit 3, Mr. Harmon. Now, you're showing some faulting there. If that's the case, why did Fasken Land and Minerals elect to participate in Mewbourne's well?

A. To what?

Q. Why did Fasken Land and Minerals elect to participate in Mewbourne's well?

A. To not participate would throw you out of the well.

Q. So this faulting you show doesn't mean that it's not productive in the Morrow?

A. No, but it is much lower, and you have reserve risk as you get lower in this section.

Q. Can you show a reserve risk in other wells from seismic?

A. Do you want to elaborate on that?

Q. Yeah, has -- You're saying that the faulting shows some reserve risk in Mewbourne's well as compared to Fasken's well; is that correct?

A. It shows that their location is structurally a lot lower.

Q. Can you show that in any other wells in this area?

A. No, I don't know what you're getting at. If you can --

Q. Would this north-south or kind of S-shaped fault you show in Sections 1 and 12 -- would that be a boundary for drainage by Texaco?

A. I don't know what the throw on that particular fault is. You might ask Lou to estimate that.

Q. Well, I believe you testified it was 100 feet.

A. Well, I'm talking about the north-south one in the middle of the sections. Are you --

Q. That's the one I'm talking about, that's the one I'm talking about.

A. Oh, okay, I'm sorry, we're on different faults.

Q. I'm talking about that S-shaped fault between Sections 1 and 12, between the proposed Mewbourne location and the Texaco well.

A. Okay. And then your question is -- ?

Q. Would that be a boundary preventing drainage between Texaco and the Mewbourne well?

A. Yes, I think so.

Q. Are there any other faults on this -- in this area that aren't shown on this map?

A. No, we've put all the Morrow faults on the map that were inside this blue box from the seismic. Outside the blue box, I chose not to put any other faults and just used subsurface contouring.

Q. Okay. So you're showing the faults in the blue

box; there might be other faults out here?

A. There might be.

Q. Looking at the well in Section 15 on the southwest corner of your map, it has a minus 07- -- I mean, excuse me, a minus 7028 by it. Is that well wet?

A. I believe it doesn't have any sand, some -- like a thin, tight sand in the brown.

Q. It's not wet?

A. Well, I just have to check. Didn't encounter much sand there.

Q. What about the east side of the field? Wells in Sections, say, 5, 6, 7, that area? Are any of those wells wet?

A. Yes, they get wet over there.

Q. All of them?

A. Most of them.

Q. The -- Specifically, the three that are on Sections 6 and 7, are they wet?

A. I believe so.

Q. Let's move on to your Exhibit 4. First, starting with the wells in the township to the north in Sections 33 and 34, those two brown-colored wells, are those commercial in the Morrow, or were they?

A. The well in Section 33 made 110 million from the Morrow, and it was perf'd in both the middle Morrow and

lower Morrow, which is considered noncommercial.

The well in Section 34 that's colored brown made 654 million from just the brown sand. That is a thick well, and it was perforated just in the top of the brown sand, and the lower portion of that sand is wet up there at that position.

Q. Would you drill a well for 654 million cubic feet?

A. No.

Q. Now, looking at this, in the brown it shows, just in thickness -- By the way, this is a gross map. Do you have a net map?

A. No, I don't.

Q. Why not?

A. Didn't prepare one.

Q. Do you think that's of any value at all in this lower Morrow?

A. I'm sure it would be.

Q. Just looking, now, in Section 1, the proposed Fasken and Mewbourne wells, you have them at approximately the same thickness.

A. Yes.

Q. But based on this map, Section 1, whether you choose Mewbourne's location or Fasken's location is better than Texaco's wells, are they not?

A. That's correct.

Q. Does that mean that Texaco's well could be preferentially draining Section 1?

A. I don't think so.

Q. Now, I think you said that the Unit F Section 12 well was severely depleted in the -- in the lower Morrow?

A. It is depleted. Our conversations with Texaco indicated it had --

Q. Why would it be so depleted if there's a -- what you show as a pretty good reservoir to the north?

A. I think the further you go away from this Number 1 well, the higher pressures you'll encounter in those lower Morrow sands.

Q. And although you don't have it on here, you would have a fault between the -- that S-shaped fault between the Texaco well and the Mewbourne location in this sand?

A. Between the -- There's a fault between the Mewbourne location and the Texaco Number 2 well.

Q. Could that result in pressures being virgin or substantially higher at the Mewbourne location?

A. I think it would.

Q. Let's move on to your Exhibit 5, Mr. Harmon. Again, this is a gross map. Did you ever prepare a net map?

A. I did not.

Q. Or are these figures you have by the well net and gross, or are they just -- the Fasken well in -- the existing -- the previously drilled Fasken well in Section 1, you have 0, 12; what are those?

A. The legend says the net porosity greater than or equal to 8 percent over gross sand, so I gave that well no porosity greater than 8 percent and 12 foot of thickness --

Q. Okay.

A. -- lower Morrow orange sand.

Q. Once again, would this map show that Mewbourne's location is as good or better than Fasken's location in Section 1?

A. For sand thickness, but not structurally.

Q. And once again, because of this faulting you claim Mewbourne's location could be pressure-separated from the Texaco wells?

A. That's certainly possible.

Q. Once again, could -- because you show a greater thickness to the north, could Texaco wells be preferentially draining Section 1?

A. In these lower Morrow sands, I do think you have longer areas that drain, and I wouldn't be surprised, even at the Fasken location, to find a -- a less of a pressure there than virgin.

Q. Okay. But because of the way you map the

reservoir, really, Texaco would have more of an effect on Section 1 than a well in Section 1 would have on Texaco?

A. Correct.

Q. Section 6, Mr. Harmon --

A. Map 6?

Q. -- this -- And I'm sorry, I wasn't listening at the time. Do you think the purple sand is -- your purple sand is prospective in Section 1?

A. I think we'll find some there, yes.

Q. Okay. And Mewbourne's location has potentially thicker sand?

A. Yes.

Q. Let's move on to your Exhibit 7. Looking at your Exhibit 7, first off, you have 10 feet in Fasken's old Section 1 well, you have -- in the Texaco wells you have 14 feet and 6 feet. I mean, they're equivalent. Why was the Fasken well not better than it was, in your opinion?

A. Just didn't have the permeability.

Q. Would it be best to, as a result, kind of stay away from that well as much as possible?

A. I wouldn't want to twin it.

Q. Now --

EXAMINER STOGNER: Excuse me, what was that?

THE WITNESS: I would not want to twin that well.

Q. (By Mr. Bruce) Can you give us an idea of how

far away you would prefer to remain from that well?

A. I don't have an estimate.

Q. There's some, you know, deep tests over to the northeast, you know, in Section 5 and Section 31. How come you didn't include these in your mapping?

A. I was just mapping the area surrounding Section 1, and I just didn't extend it that far.

Q. What thicknesses do those wells have in the blue sand?

A. In Section 5?

Q. Sure.

A. One well on the map has 7 over 14, 7 percent -- I mean 7 foot of net porosity greater -- equal to 8 percent, over a gross sand of 14 percent. I didn't put the numbers for the other two wells.

Q. Do you know what they are? Do you have them in your notes?

A. I've got log sections, and I could look them up if you want me to do that.

Q. If it wouldn't take too much time, sure.

A. Well, the Location G of Section 5 looks like it has 10 foot of blue sand, gross.

Q. Which one? Ten feet?

A. Ten feet.

Q. Okay.

A. None -- No net.

And the well in Section -- in location F looks like it has 6 foot of gross sand, and 4 foot of that is net.

Q. I'm sorry, Mr. Harmon, but I don't understand why you then show -- you've got a -- In Section 5 you've got 6 foot and 14 feet, and then just right in between them you put the zero line.

A. I have a zero point in Section 6.

Q. Is it contoured correctly?

A. I believe it is.

Q. So even with 6 and 10 feet, you still -- everything north of -- you've got the northern two-thirds of Section 5 as zero?

A. I really wasn't focusing on Section 5 when I made this map. I don't even have, you now, numbers on those wells.

Q. Oh, okay, looking at Section 2 you've got 3 and 4 feet, 3 net, greater than 8 percent, and 4 feet gross in the well in the southeast quarter of Section 2. Is that well prospective in this interval?

A. No, I think it's too thin to be productive.

Q. Well then, how come you're moving closer to that well?

A. We've spotted our location to be on the upthrown

side of that major Morrow fault, and also to stack the Cisco pay.

Q. Is your location based more on the Morrow or on the Cisco?

A. Both.

Q. Equally?

A. Yes. Well, let me --

Q. Then how come -- Go ahead.

A. Let me rephrase that. Our location, we think, has an equal chance at the Morrow, but it is spotted for a Cisco location. We really can't move it from that spot or we'll miss the Cisco.

Q. And the nearest Cisco producer was uneconomic?

A. Right, there's a gas show in Section 2, in the southeast quarter, and then there are producing wells in the northwest quarter of Section 2.

Q. Let's move to your Exhibit 8, then. We're almost through this.

Once again, looking at the Fasken well, the existing Fasken well in Section 1 and comparing it with some of these other green producers, has similar thicknesses. Once again, why is the Fasken well not better than it was?

A. It's a tight well, low permeability.

Q. Now, you've said you've got northeast-southwest-

trending sands in this area, but then you've got -- over on the east side, you've got two clumps of sand that are northwest-southeast.

A. Right, and I interpret those to be tidal bars.

Q. What's that?

A. Tidal bars.

Q. It's a complex system, isn't it?

A. Yes, it is.

Q. And it could well be that Mr. Williams is right, that it trends more north-south than you have it, connecting the Fasken well and the Texaco wells to the south?

A. Mr. Williams is welcome to his opinion. I've correlated these logs and mapped them the way I saw them.

Q. Now -- Mr. Harmon, it seems that all the maps we've gone through show that Mewbourne's well is a better location in the Morrow than Fasken's well. Would you agree with that?

A. No, I wouldn't.

Q. Could you explain that?

A. I believe our location is on the upthrown side of a major fault, and theirs is on the lower side, and thus closer to any gas-water contacts.

Q. Where -- you know, what -- Where are the gas-water contacts?

A. I believe Mr. Williams testified yesterday he felt like there's a gas-water contact at 7160, wasn't it?

Q. You'd agree with that?

A. Sounds reasonable.

Q. Okay, and that would be to the east of Section 1 --

A. Yes.

Q. -- roughly?

What is -- Does Fasken have a track record out here on Morrow exploration results based on 3-D seismic?

A. I don't believe we've done any exploration on 3-D seismic in the Morrow.

Q. What about in the Cisco/Canyon?

A. No, we have not.

Q. Now, this seismic was -- Is it Fasken's, or is it Matador's?

A. It's Matador's seismic.

Q. Have they drilled any other Cisco/Canyon wells out here, based on that seismic?

A. On this seismic survey? No.

Q. How about any others to the north of here?

A. I believe they did.

Q. Were they successful?

A. I don't think so.

Q. Now, if in the event Fasken's well is first

drilled and you encounter Cisco/Canyon and Morrow pays, how would you produce those two zones?

A. I don't have a plan right now.

Q. So you don't know which one you would produce first?

A. You know, we would drill stem test all the zones and we would make and appropriate response after we had drilled it and saw what we had.

Q. Is your AFE set up for dual completion in the two zones?

A. I don't know.

Q. If you completed in the Morrow first, would there be any jeopardy to the Cisco reserves because of the offsetting saltwater disposal well?

A. I don't believe so.

Q. If you completed the Cisco first, would you be in danger of being drained by the Texaco Morrow well in Section 12?

A. At some point in time you might.

Q. Could you commingle them in the wellbore?

A. I don't know. It would just depend on what we found.

Q. Does the Texaco well in Unit F of Section 12 encourage you about the Morrow prospects in this area?

A. Yes.

Q. Don't you think it would be a little closer to that well?

A. I think it would be better to be on the upthrown side of that fault.

Q. But you've just testified that the Mewbourne location probably wouldn't be drained because it's on the downthrown side?

A. That's correct, and I also testified it's probably closer to water. There may not be as many reserves at that location.

Q. If Mewbourne's well is approved by the Division, will Fasken drill it?

A. Yes.

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

EXAMINER STOGNER: Thank you, Mr. Bruce.

Mr. Carr, your witness.

MR. CARR: I have no questions.

EXAMINER STOGNER: Redirect, Mr. Kellahin?

MR. KELLAHIN: Just a few, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q. When you look at the seismic data, Mr. Harmon, is there any probability of encountering one of these Cisco mound traps at the Mewbourne location?

A. No, not at all.

Q. In order to have an opportunity to access the Cisco at the Fasken location, is it necessary to also have the potential for the Morrow reservoirs as well?

A. Yes, we feel the Cisco is too risky to drill for by itself.

Q. And that the Mewbourne location is too risky because it's downstructure and closer to water?

A. That's correct.

Q. So when you're combining the multiple opportunities for Cisco and all Morrow reservoirs, your preference is for the Fasken location?

A. That's correct.

Q. That, in your opinion, is the most prudent thing to do?

A. Yes.

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

EXAMINATION

BY EXAMINER STOGNER:

Q. The fault that you show in Exhibit Number 3, does that affect the Cisco, or does it go through the Cisco or include the Cisco?

A. No, it doesn't.

Q. So the Cisco is deposited over that fault?

A. Yes. It influenced -- Well, never mind.

Q. What's the relationship of that 7100-foot contour line, subsea 7100, and that fault? What kind of relationship is there?

A. That's just the structural relationship of where that lower Morrow is at. I don't think there's anything special about the --

Q. Okay. Now, you come to the conclusion about this fault from seismic data; is that right?

A. Yes, sir.

Q. Is that 3-D seismic or just --

A. Yes, it is.

EXAMINER STOGNER: I have no other questions of this witness. He may be excused.

MR. KELLAHIN: Mr. Examiner, we'll call at this time Mr. Lou Lint. Mr. Lint is a geophysicist.

LOUIS LINT,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A. My name is Louis Lint. I'm a geophysical consultant.

Q. Summarize your education and your background,

sir.

A. I graduated from the University of Kansas in 1978 with a BS in geophysics and a BS in geology.

Q. Summarize your employment for us.

A. I've got just over 18 years of employment as a professional geophysicist. I've worked for major oil companies, large independents and small independents and am currently a consultant.

Q. Where do you reside, sir?

A. Midland, Texas.

Q. Were you involved in the geophysical study that we've characterized as the Matador 3-D seismic data?

A. Yes, I was. I designed the original shoot and supervised the acquisition and processing and interpreted the original data set.

Q. And based upon that data set and all that information, your experience, education and knowledge, do you now have conclusions, recommendations and opinions for the Examiner?

A. Yes, I do.

MR. KELLAHIN: We tender Mr. Lint as an expert geophysicist.

EXAMINER STOGNER: Any objection?

MR. CARR: No objection.

EXAMINER STOGNER: So qualified.

Q. (By Mr. Kellahin) Mr. Lint, let's look at Fasken Exhibit 3. Yesterday Mr. Williams testified that he acknowledged a substantial risk in the Morrow moving downstructure and being in proximity to water. That conclusion is shared and confirmed by Mr. Harmon this morning.

Mr. Williams testified that the lowest known gas, yesterday, was minus 7160 and that the gas-water contact, based upon wells to the east, was somewhere in the 7180 to 7263 range.

With that information, Mr. Lint, where on the structure, based upon the seismic data, would you find the Mewbourne location in relation to the gas-water contact?

A. My estimation is the top of the lower Morrow marker will be encountered at a minus 7150 at the Mewbourne location and at approximately a minus 7050 at the Fasken location, approximately 100 foot of difference.

Q. At the Mewbourne location, if the lowest known gas is minus 7160, they're only ten feet higher than that point?

A. That would be correct.

Q. Is there a substantial risk that their location is going to be wet in the Morrow?

A. With what you know from the highest known -- or lowest known gas, yes, there would be.

Q. Before we talk about the details of the seismic study, describe for us the conclusions and the characterization of the fault that you have located between the Fasken location and the Mewbourne location in the south half of Section 1.

A. It's basically a fairly north-south-trending fault, dying out north and south as represented on the map. It has approximately 100 foot of throw at the Mewbourne location. Faults completely through the Morrow section, most likely clear up into the Strawn section, a formation higher.

Q. When we look at the extension of that fault, as you move south it follows the minus 71-foot contour line [*sic*] for a certain distance?

A. That's correct.

Q. Describe the character of that fault as we move south into the Texaco spacing unit.

A. It starts to die into the actual dip you see to the south and loses throw and disappears completely.

Q. When we look at the north end of that fault, what happens to cause it to terminate within the spacing unit north of the Fasken location?

A. Again, it dies out gradually, but at a lot faster rate than the southern end.

Q. Let's look at the other major fault to consider.

It's the one that runs in 11. It runs generally southwest to northeast. Do you see that one?

A. Yes, I do.

Q. Describe and analyze the character of that fault for us.

A. It's a very prominent fault in the very southwest corner of the 3-D. I might add, the 3-D is the blue outline on that map. I can see the fault strongly in the southwest corner, and it gradually dies as it moves to the northeast and ends almost at the intersection of the four-section corner.

Q. Based upon your study of the seismic data, is there any doubt or reservation, in your expert opinion, as to the termination of that particular fault we're discussing now?

A. No, there isn't.

Q. Can you conclude that the Fasken location and the Texaco Levers 2 well are within the same structural area that is not fault-separated?

A. I see no fault separation between Texaco and Fasken's location.

Q. Let's go back and talk about the general foundation of data. Describe for us the system that was constructed in a general way.

I recognize that you're under a confidentiality

agreement with Matador. But recognizing that and without violating that confidence, describe for us the quality of the data and the reliability of the data and the general method by which this 3-D seismic was developed.

A. It was acquired in late 1994 using state-of-the-art equipment and techniques at that time. It was acquired in a reliable manner by a reputable company. At that time, the data was processed by another reputable data-processing company, also the same company that acquired the data.

And I then analyzed that data after I received it from the processor. Data quality for this area was quite good. The events were picked using sonic logs converted to synthetic so I could identify my events. Several structural events were very easily identified and highly correlable through the data set and were mapped.

Q. Are both the Cisco and the Morrow events identifiable and structurally mappable?

A. Yes, they are.

Q. What then did you do?

A. I then interpreted the data set for those horizons and created maps from those.

Q. Okay. When we investigate the Morrow structure map as we're doing now on Exhibit 3, am I correct in understanding that, as part of this analysis, that you have not identified individual sand packages, if you will; that

was not the point of the study?

A. No attempt was made to do individual sand packages. They're way too thin to see individual sand packages on seismic. But that lower Morrow sand -- or shale, is a very prominent interface, and it's very mappable as a structural component.

Q. Have some other companies attempted to try to use 3-D seismic as a method to actually map the individual sand packages?

A. It has been tried, yes.

Q. All right. That was not what you were doing here?

A. No, I did not try that at all.

Q. Are you satisfied within a reasonable technical certainty about the reliability of your ability to map the faulting and the structure in the Morrow shale?

A. Yes, I am.

Q. When we look at the conclusions with regard to that study, what do you find in terms of the Mewbourne location in contrast to the Fasken location?

A. It is downthrown on a 100-foot fault to the east.

Q. One of the things that I believe scientists of your discipline and profession do is to satisfy yourself that you, in fact, are seeing faults, and that that is not simply a velocity-induced fault that is simply created by

the process. I did not describe that very well, but --

A. I believe I understand your question.

Q. All right. The point is that you will analyze and look to make sure your data is generating a reflection of an actual fault, rather than having some change in velocity give you a false fault reading?

A. That's correct, I am.

Q. All right.

A. I always check them all out to make sure they are real events.

Q. Can you use both of these faults that you have shown in the area we've just described and identify for the Examiner why you're absolutely convinced that these are faults positioned as they are and do not represent velocity-induced faults?

A. There's a strong velocity contrast across the area. It runs basically north to south, with it getting -- rocks getting faster to the north, pretty much an east-west strike with a velocity gradient.

When we look at the fault in the southwest corner, that trends southwest-northeast, it's a very prominent fault in the seismic data, confirmed by subsurface control. I therefore believe it since I've confirmed by geology.

And then, since it runs on strike with velocity,

I look to see if it could be a velocity-induced feature. With the rocks getting faster to the north and the throw of the fault being upthrown to the south, there's no way it could be a velocity-induced feature because the throws are backwards. If it's going to be a velocity-induced feature, it would pull it the other direction. So you would have to thrown the fault different and then dishonor your subsurface control. So in my mind that confirms that fault.

Q. How about the other fault?

A. As for the north-south-trending fault, just by the fact that it runs perpendicular to the velocity gradient makes it fairly hard for that to be any kind of a velocity-induced feature. If it was a velocity-induced feature, you're having velocity gradually change across that whole fault in a uniform manner. There's no way you can have an abrupt change when you're running perpendicular to a velocity gradient.

Q. Let me turn your attention to Exhibit 10 and have you identify and describe for us Exhibit 10.

All right, sir, Mr. Lint. Identify and describe Exhibit 10.

A. Exhibit 10 is simply a base map to show the location of the data pertinent to this hearing and the location of the relevant wells. The small dots actually

show every tenth dencenter on my 3-D data set.

Q. You're satisfied that the density of the data points is appropriate for examination of the features that you're studying?

A. That is correct. Those are every tenth data point. I have a data point at every 110-foot interval.

Q. Let's turn to the map that's prepared by you for this analysis and look at -- Let's look at Exhibit 11. First of all, identify for us what we're looking at, and then we'll begin to describe the conclusions you can reach from the display.

A. This was a map constructed on the top of the Cisco reflector. This is a time structure map. Data was measured exactly from the data set posted and contoured.

Q. What we're looking at here is the analysis of the Cisco opportunity at the Fasken location, in contrast to the Mewbourne location?

A. That's correct.

Q. Okay. Describe for us the significance of the color code.

A. The red colors represent the high-time areas, the greens gradually lower, and the blues is the lowest position on the map.

Q. What does that mean to you in looking at the structure map, then?

A. The high area is off to the northwest with an isolated high structure at the Fasken location. The Mewbourne location is on the downward slope, significantly downslope on the Cisco reef.

Q. Let's turn to Exhibit 12 and have you identify and describe this display.

A. This is another representation to show the same effect. I was able to map the third Bone Springs sand in the area. It's also a good seismic event. It's a common practice to isochron from a shallower horizon, down to the objective. Thinning in that would lead you to the conclusion that you have structures.

This is a map that shows an isochron time interval between that Bone Spring marker and the Cisco. It shows, again, the same thing, a thinning in the northwest corner where the red colors represent thin seismic times, sloping off quickly to the southeast.

Q. What does this information allow you to conclude?

A. That that is indeed a Cisco structure, high likelihood of a seismic Cisco structure.

Q. At the Fasken location?

A. At the Fasken location.

Q. And we do not have that feature or event occurring at the Mewbourne location?

A. No, we don't.

Q. Let's turn to Exhibit Number 13 and have you identify and describe that display.

A. This is a map constructed between the Cisco reflector and the Morrow shale, which the top of lower Morrow map was constructed from. This was an attempt to identify thickening within the Cisco.

Again, the blue colors and purple colors identify thick isochron times between the Cisco, and the yellows represent thin areas of the Cisco to Morrow. It shows the Fasken location to be located on a thick area and the Mewbourne location to be in a much thinner area, therefore again reinforcing that we are probably in a Cisco reef position.

Q. For me as a layman, I'd like to have you explain the general strategy here you're utilizing to try to find this Cisco feature, what it is, what's it supposed to look like and how do we achieve success at producing hydrocarbons out of that Cisco?

A. It's a very subtle feature. I look for some kind of time structure on the top. I look for some thinning between the Bone Springs marker and that Cisco to confirm that, and I also look for this thickening to prove that we are in a Cisco reef position.

Q. Have you also analyzed and come to conclusions about the potential effect, if any, that the well -- the

old well in Section 2 to the west, which was a Cisco well at the time -- Mr. Bruce mentioned the fact that it had been used for saltwater disposal -- have you examined those facts and circumstances?

A. Yes, I have. It appears we'll be about 25 feet high to that Continental 2 Levers well at the Fasken location. I also know that they put 6 million barrels of oil into that well [*sic*], they also took 15 million barrels out of Springs field, which is updip from there also.

Q. Water?

A. Water, excuse me.

Q. While this was going on a while ago, you hand-drew an illustration, I think, that illustrates this example. Let me -- We've copied it, and I'll distribute it and we'll talk about it.

All right, let's look at the top drawing, if you will. It's got a mound to the left. What does that represent?

A. That would be the possible Fasken location.

Q. All right. And then at that point, in the top portion of that structural high, you have estimated a trapping mechanism to contain gas hydrocarbons?

A. That's correct.

Q. And then you've projected the Fasken well --

A. That's correct.

Q. -- just for illustration?

As you move to the right of that display, what's the purpose of the next vertical line that intersects the lower portion of that structural line?

A. That would represent the Continental 2 Levers well to the west that the water is injected in.

Q. What's the point?

A. I was showing that the 6 million barrels of water had been injected into that reservoir at that point, downdip to the Fasken location.

Q. Would that water injection downdip in the Cisco structural feature have an adverse effect on the Cisco hydrocarbons that are trapped in the feature you show at the Fasken location?

A. Not in my opinion. That's a strong water drive reservoir. You've taken 15 million barrels out of the Springs. There's a net deficit of 9 million barrels of water -- Excuse me, I keep saying oil; it's water. I don't like to talk about water.

With that being a strong water drive reservoir, I really doubt if you can flush those structures out. I'm not an engineering expert; that's just my opinion.

Q. Is this Cisco structural feature the only closure in the Cisco that you see within the entire proposed spacing unit?

A. I think I'd be treading a little bit on some of the confidentiality.

Q. All right.

A. There is one small one associated with the Continental 2 Levers.

Q. No, I meant within -- within this particular area of dispute between Mewbourne and Fasken.

A. No, no.

Q. All right. And the magnitude of differential in structure between the Mewbourne location and the Fasken location on the feature is approximately what, sir?

A. It's quite a bit. Excuse me, I'll have to look that one up. It will be approximately 250 to 300 feet.

Q. In addition, at my request, I have asked you to prepare and bring with you certain -- taking the data set, you can construct, if you will, a connection of the data to illustrate the various faulting features in the Morrow reservoirs, can you not?

A. That's correct.

Q. And at my request you have prepared certain of those lines to illustrate the faulting that's occurring in the Morrow?

A. That's correct.

Q. Let's turn to the first of those displays. I think it was Exhibit Number 14?

A. I believe those will need to be distributed.

Q. All right, Mr. Lint, let's start with Exhibit Number 14. Before you reach the interpretation, tell us how to understand the data illustrated.

A. This is a -- it appears as a 2-D line. This is one segment of a line through the 3-D data set. It gives the appearance of a 2-D line. This is a straight east-west line. It runs exactly east-west through the Mewbourne proposed location. It would be proposed location on our identification plat that I gave you. I guess it was Exhibit 10.

This is actually line 70, which is even annotated on that.

Q. What would you call this type of display?

A. This would be called -- This would be an in-line display from the 3-D data set.

Q. What is our point of view in the reservoir?

A. Like I say, this one goes east-west directly through the Mewbourne location.

Q. The Mewbourne location is projected by the red line?

A. That is right, it intersects this line exactly at that point.

Q. At the bottom portion of the display, just to the left of the Mewbourne-projected location, there's another

vertical red line. What does that represent?

A. That's the fault we're talking about that runs north-south between the Fasken and Mewbourne locations, where it intersects this line.

Q. As we start at the top, moving down, you have colored an interval and identified it as the third Bone Springs?

A. That is correct.

Q. Describe for us what you're seeing in that interval of the display.

A. Relatively normal southeast dip, east-to-southeast dip.

Q. We move down into the Cisco, which is the blue-shaded interval, and what do you see and conclude?

A. You see a very rapid climb to the Cisco reef edge as you go to the west, and then you see some structural closure in an east-west direction on this particular line.

Q. And then you move down into the Morrow reservoirs, and what do you see and conclude?

A. For one thing, you can map the thing that is called top of the lower Morrow. It is actually that interface between that middle Morrow shale and the top of the lower Morrow. That's the structural marker we mapped, and the map number Exhibit 3 was created from.

It shows the presence of a very strong fault

slightly west of the Mewbourne location. It shows also that the fault breaks entirely through the Morrow, and it also shows that the thickening of that entire yellow-orange-colored section, which is the lower Morrow, has no change in thickness from one side to the other, therefore saying post-Morrow faulting.

Q. Okay. You can use this type of information and the rest of your data set, then, to construct Exhibit Number 3, which shows us the rest of how this fault is oriented and positioned on this structure?

A. That is correct. I have approximately 160 of these similar displays. Each one was interpreted one at a time, and this map was created from it.

Q. Your conclusion, sir, about this issue?

A. The Mewbourne is on the downthrown side of a fault at the Morrow level.

Q. Let's turn to Exhibit 14 and have you identify and describe this display. I'm sorry, that was 14 --

A. Yes.

Q. -- we're doing 15.

A. Yeah, 15. 15 is a north-south line taken from the data set, as opposed to the east-west we just looked at. It runs exactly north-south through the Fasken proposed location, location number 2. The red line represents where that wellbore would intersect that seismic

line.

Q. Starting with the third Bone Springs, give us your conclusions and interpretations as we move down through the reservoirs.

A. Same thing at the third Bone Spring as the previous line, south -- This shows the south dip component of that.

The Cisco, this more dramatically shows how quickly the reef drops to the south, and it shows the north-south rollover component that we're talking about there.

It also shows that at the top of the lower Morrow, the yellow event, this line would run directly north-south through the Fasken location, would run slightly west of the Texaco locations. If the fault that crosses southwest-to-northeast through Section 11 was present, it should intersect this line. It does not.

Q. You can conclude, then, what, sir, with regards to the fault in Section 11 as it approaches the south half of 1?

A. It is gone before it reaches this particular line.

Q. Come back up to the Cisco.

A. Okay.

Q. Can you use this illustration to identify the

Cisco feature that you're proposing be accessed at the Fasken well location?

A. I can. The north-south rollover you see on that blue reflector is the north-south component of the small structural feature we'd like to hit with the Fasken location.

Q. When we look at the top of the lower Morrow and continue through that interval, you see no faulting or separation as we look in this dimension of the reservoir?

A. No, not in the area of question.

Q. Your conclusions, then?

A. There is no fault separating the Texaco production from the Fasken location at the Morrow level. There is north-south and east-west closure on the Cisco at the Fasken location. The Mewbourne location is downthrown on that small fault and significantly down Cisco slope.

MR. KELLAHIN: Mr. Examiner, that concludes my examination of Mr. Lint.

We move the introduction of his Exhibits 10 through 17.

EXAMINER STOGNER: Any objections?

MR. CARR: No objection.

MR. KELLAHIN: I'm sorry, Mr. Examiner, I've forgotten one, if I might --

EXAMINER STOGNER: I thought you did.

MR. KELLAHIN: I stopped one short. Let's finish this off, then, please, with your permission.

EXAMINER STOGNER: Sure.

Q. (By Mr. Kellahin) Number 16, then, Mr. Lint, I apologize.

A. This is a line that runs directly east-west through the Fasken-proposed location. Primary function, again, is to illustrate the east-west rollover component of the Cisco reflector at that location.

Q. So now we've seen the Cisco in both directions, if you will?

A. Yes, these two lines intersect directly at the Fasken proposed location, show you the north-south, east-west closure.

Q. On the bottom portion of the display, there's a red line vertically oriented. What is the meaning of that?

A. There is some faulting down in the Devonian and Mississippian. This shows that some of that faulting is pre-Morrow and doesn't affect the -- actually structurally break the Morrow reflector.

Q. And this exhibit is included in part of the conclusions you just gave the Examiner?

A. Yes, it is.

MR. KELLAHIN: Mr. Examiner, with that supplement we move the introduction of Mr. Lint's Exhibits 10 through

17.

EXAMINER STOGNER: Exhibits 10 through 17 will be admitted into evidence.

Thank you, Mr. Kellahin.

Mr. Bruce?

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Lint, let's start with the Cisco/Canyon first. What is the approximate size and location of this survey?

A. It was 7.1 square miles for the total size of the survey.

Q. Okay. Looking at the south one third of Section 1, where is that located with respect to the -- you know, is it on the edge, is it in the middle?

A. It's fairly well in the middle, pushing to the east side. I believe that's illustrated with a blue outline on your Exhibit Number 3, show you the exact relation to the acreage in question.

Q. Okay. I didn't understand that from Mr. Harmon.

How much variation in the -- How much does the Cisco thickness vary, say, from the south half of Section 2 to the north half of Section 12?

A. I've only measured that in a time manner. I'm showing approximately 42 milliseconds of thickening across

that map.

Q. So you're not sure of the thickness?

A. I could calculate it if it was needed.

Q. Now, this was originally shot for Matador?

A. That's correct.

Q. When was that?

A. In late 1994.

Q. Okay. Matador owned interests in this area back then?

A. That is correct.

Q. Why didn't Matador pursue this prospect?

A. We pursued it purely as a Cisco prospect. The closure that was identified on the acreage that Matador had access to was too small to accept the risk for drilling a pure Cisco location for a 50-foot closure.

Q. Do you agree with Mr. Harmon that this is still too risky just to drill for a Cisco?

A. Definitely.

Q. Okay.

A. Fifty feet is a pretty subtle structure.

Q. Is it also subtle for faulting?

A. Since most of the faults I've identified here are 100 foot or more, I did not address that question.

Q. What -- I mean, what is the dividing line? You say 100 feet. Is it 75 feet and not 50 feet?

A. Resolution on the seismic data I have here is probably about 70 feet, 60 to 90 feet.

Q. So you're right on the edge?

A. Not really. That edge comes very fast, very abruptly, you go over it quickly.

Q. Could the Fasken location in Section 1 be completely wet in the Cisco?

A. Very possible. There could not be a structure there.

Q. Okay. Were you involved -- You know, I asked Mr. Harmon a question about another Matador Cisco/Canyon well to the north or northeast. Were you involved in that well?

A. Yes, I was.

Q. I believe it was in what? Section 19, 20 South, 27 East?

A. That's correct.

Q. Was that test successful?

A. No, it wasn't.

Q. What went wrong with the well or with the interpretation there?

A. I believe it's probably not common company practice to release the techniques that were used in the analysis of that particular area. It's proprietary data. How it was arrived at is proprietary information.

Q. Are you using similar techniques here?

A. I could go say yes, I use similar techniques.

Q. Have you previously prospected for the Morrow using 3-D seismic?

A. Yes, I have.

Q. What are the res- -- any -- In this area?

A. Not in this immediate vicinity, no.

Q. Just a couple of last questions on the Cisco. Do you have Mr. Harmon's production map? I believe it's Exhibit 1.

A. Yes, I do.

Q. I've circled it on my map, but kind of around Section 34, that's the Cisco/Canyon Pool?

A. That's that Springs field.

Q. Okay, and you're hoping to find something similar over to the southeast?

A. I don't think you'll find anything that large. That's quite a large one. This one covers approximately 700 acres. I think we're looking at something that may be in the range of 100 to 120 acres.

I prefer to use another analogy, McKittrick Hills, a field six miles south of us, again another prolific Cisco field, 50 feet of closure, over 200 acres, made 15 BCF of gas, illustrates the lucrativeness of a Cisco location.

Q. Were either of those found on 3-D?

A. Not to my knowledge. I don't think 3-D had been invented yet.

Q. Can you determine porosity, permeability and fluid components with 3-D seismic?

A. Which play are we talking about?

Q. This one.

A. It has been done in places, not by myself.

Q. Let's move on and discuss the Morrow, and maybe take Mr. Harmon's Exhibit 3, which is the general faulting map. I just have a few questions there, but...

Now, yesterday, Mr. Williams testified about a gas-water contact at about minus 7260 or thereabouts. Looking at this -- Section 6 to the east is wet, would you agree, in the Morrow? Or at least in parts of the Morrow?

A. As I've been informed, yes.

Q. Okay. Now, the Fasken well in the east half of Section 1 at minus 7219, that was not wet, was it?

A. To the best of my knowledge.

Q. Okay. Now, the Mewbourne proposed location is updip from the Fasken location, is it not?

A. Excuse me?

Q. The Mewbourne proposed location is structurally higher than that existing Fasken well?

A. Oh, the existing Fasken well, yes.

Q. So it should --

A. I would say it's probably 50 feet high to that well.

Q. So it should not be wet, would you agree?

A. Provided that well is, yes, not wet.

Q. Provided -- ? I didn't hear your answer, I'm sorry.

A. I said provided, yes, there's no water in that well, yes, that you would be -- there should be no water in the Mewbourne location in that same sand.

Q. Have you studied the gas-water contact anywhere in this pool?

A. Only that I know the lowest known gas is at a minus 7160.

Q. Well, but --

A. And I gathered that information yesterday from Mr. Williams.

Q. I believe he said 7260, Mr. Lint.

A. I believe he said that the gas-water was somewhere between 7180 and 7263 in the brown sand, and then he said the lowest known gas was at a minus 7160.

Q. Now, there are multiple Morrow zones, are there not?

A. That is correct.

Q. Now, this fault -- I mean, just because there's a fault -- you show this fault between -- I've been calling

it this S-shaped fault between -- running from Section 1 south to Section 12. Just because of this faulting doesn't mean the Morrow is not productive on the downthrown side of that fault, does it?

A. No, it doesn't.

Q. And as a matter of fact, if Mewbourne is on the other side of that, that would prevent any drainage between the Texaco and -- or competing production between the Texaco and Mewbourne locations; is that correct?

A. I believe you're out of my expertise. I'm not an engineer.

Q. Okay. Now, a look on the southern side of this production map, there's a well in the south -- extreme southwest corner of Section 18.

A. Okay.

Q. Now, there's a well in the -- it's marked -- just looking at the marks, minus 7239. There's a well in the northwest quarter of Section 19 that produced quite a large volume of gas in the Morrow. Are you aware that those two wells are separated by faulting?

A. I have not studied that particular portion of the map, no.

Q. Give me one minute, Mr. Examiner.

One final question. Is it possible -- this goes back to the Cisco/Canyon -- that the Fasken Cisco prospect

is a shelf-edge velocity problem?

A. When you're dealing with 50-foot subtle structures, it's always a possibility. It's been my observation that every proven structural field out here has a time structure on top of it, but not necessarily every time structure has a subsurface structure associated with it.

But I do know that if you do not locate there, you will not hit that even possibility.

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

EXAMINER STOGNER: Thank you, Mr. Bruce.

Mr. Carr?

MR. CARR: I have no questions.

EXAMINER STOGNER: Mr. Kellahin, redirect?

MR. KELLAHIN: No questions, Mr. Examiner.

EXAMINATION

BY EXAMINER STOGNER:

Q. In looking at Exhibit Number 15 -- that's your north-south plat or line -- and when I look at the lower left-hand corner, are those faults that I'm seeing?

A. Those are faults that break the Mississippian but do not break the top of the lower Morrow.

Q. In what way -- Or do they affect the Morrow any at all? Not -- They didn't break through. Did they affect it some way with the deposition of the Morrow?

A. I would think they would. That would be sound geological reasoning, and you see some isochron thickening on the downthrown sides of those faults.

Q. Okay. On Exhibit Number 14, now, if I look in the lower right-hand corner to the east, now, that's a fault, and you show it to extend into the lower Morrow. Does that correspond, if I look on Exhibit Number 3, to that fault to the far right of your 3-D outline?

A. No, that would be a different fault.

Q. That would be -- Okay. Is that a fault or -- How come it's not on the map?

A. You're pushing the edge of the limits of the data there. About a -- I'd say a quarter, an eighth-of-a-mile strip on the outside edge of the data is not reliable data --

Q. Okay.

A. -- due to the processing techniques. The upsweep nature you see of the reflectors on the edge is induced by the fact that is the end of a survey, and it's not real.

So that red line, essentially, on Exhibit 14, the farthest fault I've got marked would really be the end of the usable data.

Q. Okay. Now, if I go the other way, back to the west --

A. Okay.

Q. -- does that fault that you show that comes in out of the southwest and extends toward the -- I guess more like the west-southwest and heads up there in the east-northeastern direction and then it ends just right into Section 1, that's a terminal point that doesn't show up on Exhibit Number 14?

A. No, that is another supporting factor, that that fault does not continue across Section 1.

Q. Okay.

A. If it did, it would show up on this line.

Q. Would you have indications because of -- You definitely had indications, then, of that fault as it extended to the southern part of your 3-D outline?

A. That's correct.

Q. Okay. On such a technique, are you able to determine what the vertical extent of those faults are, of the offset?

A. Within reason, yes, I can.

Q. And what -- When I look at the so-called S-shaped fault that we're describing here between the proposed Mewbourne well and the Texaco well, what is the maximum extent, or where along that S does that extend and what would it be?

A. I think it's about right where the Mewbourne location is. You can see a small structural high on the

upthrown side, and that calculates to be a little over 100 feet of throw.

EXAMINER STOGNER: Any other questions of this witness?

MR. KELLAHIN: No, sir.

EXAMINER STOGNER: You may be excused.

Gentlemen, I have 11:40.

MR. KELLAHIN: I have two procedural things to submit.

I have waivers of objection and my notice certificates.

EXAMINER STOGNER: Okay.

MR. KELLAHIN: Exhibit 18 is a waiver of objection to the Fasken location by Penwell, and attached to that is a waiver of objection by Texaco to the Fasken location.

And then Exhibit Number 19 is my certificate of notice to all the proper parties.

Mr. Examiner, I'd move the introduction of Exhibits 18 and 19.

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

MR. KELLAHIN: That concludes our presentation.

EXAMINER STOGNER: Mr. Carr, Mr. Bruce, Mr. Kellahin?

(Off the record)

EXAMINER STOGNER: Let's take a lunch and reconvene here at -- let's make it straight up, one o'clock.

(Thereupon, a recess was taken at 11:40 a.m.)

(The following proceedings had at 1:04 p.m.)

EXAMINER STOGNER: This hearing will come to order. We're considering consolidated Cases 11,723 and -- whatever the other one was, 11,755.

Mr. Carr?

MR. CARR: At this time, Mr. Stogner, we would call David Uhl.

DAVID A. UHL,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. David A. Uhl.

Q. Where do you reside?

A. In Denver, Colorado.

Q. By whom are you employed?

A. Texaco.

Q. Mr. Uhl, what is your current position with Texaco?

A. I'm a geologist working southeast New Mexico.

Q. Have you previously testified before this Division?

A. No.

Q. Could you briefly summarize your educational background for Mr. Stogner?

A. Bachelor's degree from the University of Nebraska in 1979 and a master's degree from the same school in 1981, in geology.

Q. And since your graduation in 1981, by whom have you been employed?

A. Texaco, the full time.

Q. And during that entire period of time have you worked as a geologist?

A. The entire time.

Q. Are you familiar with the Applications filed in each of these cases?

A. Yes.

Q. What is Texaco's interest in this case?

A. Well, as to the Mewbourne location, we're the affected party to the south of the Mewbourne location in Section 12. We have two wells in the section, and we're concerned that a Mewbourne at their location 660 from the lease line would adversely drain our section.

Q. Have you made a geological study of the area

which is involved in these consolidated cases?

A. Yes.

Q. Are you prepared to share the results of that study with Mr. Stogner?

A. With these exhibits, yes.

MR. CARR: Mr. Stogner, we tender Mr. Uhl as an expert witness in petroleum geology.

EXAMINER STOGNER: Any objections? Mr. Uhl is so qualified.

Q. (By Mr. Carr) Would you briefly state what Texaco seeks with this Application?

A. Well, basically what we're trying to do is that we feel as if we drilled a well there abiding by the field rules; we expect the offset operators to -- we expect the offset operator, anyone who is affecting us, to abide by the same field rules, the field rules being 640-acre spacing, 1660 from a lease line and --

Q. And what is the spacing? 640 acres?

A. 640-acre spacing, that's correct.

Q. Are you going to be requesting that a penalty be imposed on the Mewbourne location?

A. Yes, we do.

Q. And you're familiar with the rules for the Catclaw Draw pool?

A. Right.

Q. And you've just reviewed those?

A. Yeah, 640-acre spacing, 1660-foot setbacks.

Q. Is this a prorated pool?

A. It was at one time, but since 1995 it hasn't been prorated.

Q. Have you prepared exhibits for presentation in the case?

A. Yeah, I've got two isopachs, a geologic structure map and a cross-section going through the area.

Q. Let's go to the first isopach map, the isopach on the B1 sand, Texaco Exhibit Number 1.

A. Yeah, that's what we're calling the B sand, or the B1 sand in there. It might be convenient for you, since we're using a different terminology, to compare that to the accompanying cross-section for reference.

Q. And that is Exhibit Number 4?

A. Yeah, that's Exhibit Number 4. Yeah, maybe I should just outline the cross-section real briefly.

If you look on any one of the geologic maps, there's a line of the cross-section going there from A to A'. We have the David Fasken Number 1 well on the right, Mewbourne's proposed location, then, in the lines, our Texaco Levers Number 2 well, that then goes into Section 14, the Hallwood Catclaw Draw Unit Number 17, and then it ends at a dry hole over on the left, the Hanagan Petroleum

well.

The first map I have is on the B zone. That's the zone that we are producing out of right now, in the Levers Number 2.

We perforated two different zones in the Levers Number 2, as you can see on the cross-section. We perforated our C sand and also a B sand. And that B1 zone, the top set of perforations is what I have mapped.

On the map I have outlined every well that has penetrated and produced from the Morrow in this general area. I've also outlined the net feet of porosity greater than 8 percent. That's what the map is contoured on. And basically it's showing that in our well we have 18 feet of porosity greater than 8 percent.

As you move -- There's basically a north-to-south trend going on in this area. This map probably differs a little bit from the previous -- from other people's interpretations. I mean, all geologists are going to differ a little bit.

But I basically have a north-south trend going on, which is consistent with the Morrow in this area.

Q. You have 18 feet in the Levers Number 1 well, Section 12?

A. That's correct.

Q. Approximately how many feet do you show for the

proposed location that Mewbourne desires to drill in Section 1?

A. Based on the Fasken well up there in Section 1, and taking the contours around, I have that they will encounter 10 feet or greater porosity. On the map I have about 11 feet.

Q. You would agree with Mr. Montgomery that as you move to the north the quality of the reservoir deteriorates, would you not?

A. As you move to the north-northeast it does, that's correct.

Q. If we move from their proposed location toward the Texaco location, is it fair to say the quality of the reservoir is going to improve?

A. Well, we are producing about 4 million a day. I would say that it does improve quite a bit.

Q. Because of the change in the quality of the reservoir, would you anticipate a well at the proposed location to drain predominantly from the south?

A. Predominantly, that's correct.

Q. You have a standard spacing unit in Section 12, do you not?

A. We do.

Q. And it's fully developed with two wells?

A. The two wells. We drilled our original well, the

Levers Number 1, and then we drilled the optional infill well, the Levers Number 2.

Q. And the unit, proration unit, north of you is a nonstandard unit; is that right?

A. That's correct.

Q. On whom is the proposed Mewbourne well location encroaching?

A. It's encroaching on us, and only us.

Q. Let's go to Exhibit Number 2. Will you identify that, please?

A. That's the map on the C1 sand. Again, now, you have to look back at the cross-section. That is the top sand in what some people call the lower Morrow in this area. I'm calling it my sequence C. But that's a C1 -- C2 sand, I had that mixed up. This is a C2 sand.

Some of the other maps that have been presented are calling for two sands in our well. We don't have two sands in the well. We only have one sand in that lower Morrow. That's a minor point, but it should be taken.

Q. This map is definitely a fluvial sand. We know that from the samples, I know that from sidewalls that I took in that well. It's a coarse-grained sand. It has a dominant northwest-southeast pattern to it. It has produced in our Number 1 well for quite a period of time.

When we drilled the Number 2 well to the north,

we ran a drill stem test over that interval and we came up with a flow of about 2 million cubic feet of gas per day at 750 pounds flowing tubing pressure. But we know from the shut-in pressure on that, that we only had about 1300 pounds shut-in pressure. Or, excuse me, 1350 pounds from the drill stem test.

So we know that the Number 1 well, our Number 1 well in the south, has affected the pressure of that reservoir in the Number 2.

So that sand is a fairly good -- It's a fairly prolific sand, and it seems like the drainage exists over quite a large area.

Q. You've mapped the B sand and the C sand. Based on your knowledge of the A sand, does it demonstrate similar characteristics to those shown on the --

A. The A sand is also a fluvial sand. Again, I know that from sidewalls that we took on our well and the coarse-grained nature. And it also has a dominant northwest-southeast pattern to it.

But we don't have that open in our well right now, the reason being is that we had enough rate established in the bottom two sands for right now, to where we essentially were meeting most of our pipeline capacity.

Q. Let's go now to Exhibit Number 3, the structure map. Will you review that for Mr. Stogner?

A. Yeah, that's a structure map on the top of the Morrow sand sequence. That would be the top of the sequence A up there. That differs from the other structure maps that have been presented, because most of the other maps have been on the top of the lower Morrow, which would be the same as the top of my sequence C in here.

That's basically show- -- from the well control, where I do have the well control and basement geology. I mean, I can't change it a whole lot. Of course, if we had seismic we might be able to add a few little refinements here and there.

We've got a major fault off to the west, and that's demonstrated by the well control heading north-south.

I noticed on Mr. Williams' map that he has a fault running between the Continental well and our Levers Number 2 well. You're essentially running down where the four sections intersect. Basement geology, you can put that in or you can take that out. I like to take that out.

Q. Would you agree with the testimony presented in this case by Mewbourne that the quality of your well improves, the thicker the section in which you complete.

A. Quality of the well improves in the thicker section that we complete, and the more updip, with the better chance we have of getting reserves in that well.

Q. Is it fair to say that the proposed location is in a center section and downdip from the Texaco well in 12?

A. It appears to be. There's some thinner section in just about all the reservoirs that I have mapped. And it's also downdip from our location.

Q. Now, you previously referenced Texaco Exhibit Number 4, the cross-section?

A. Right.

Q. Do you have any additional testimony you'd like to present with that exhibit?

A. Yeah -- The main thing I was trying to portray with the cross-section is that our principal reservoir sands in there, the A sand, the B1 sand and the C2 sand, are relatively continuous as you go from the Fasken well to the right, through the Mewbourne location to the Texaco well.

The B sand continues on further to the west. The C sand tends to pinch out a little bit as you go past our location. But between those two wells, and including the Fasken location, we should be encountering the same reservoirs.

Q. Let me hand you what has been marked as Mewbourne -- Texaco Exhibit 6. Could you identify this, please, tell us what it is?

A. Yeah, that's a spreadsheet that I made of wells

that were just immediately adjacent to our section, including the Fasken well, the Continental well and a few wells to the south of us.

The main thing I was trying to portray on this was what zones they had been completed in, when they were completed, the timing of them, what type of initial rate these wells had, and how that initial rate compared to the AOF, the absolute open flow.

The main thing being, is that if we recommended a penalty on the Mewbourne location, how significant would that penalty have to be?

What I see in here is that if you look on the two columns on the right, the first year's average rate versus the percentage of the AOF, we're dealing -- and we're between 9 percent, 45 percent, that first year's average rate, daily production rate, versus the absolute open flow of that well.

Q. It ranges from a low of 7 percent to a high of 52 --

A. Excuse me, 7 percent to a high of 52 percent.

Q. And what is the source of the data displayed on this exhibit?

A. It's all state records.

Q. Mr. Uhl, will Texaco call an engineering witness to review the recommended penalty in this case?

A. Yeah, we're going to call Kevin Bittel.

Q. Were Exhibits 1 through 4 and 6 prepared by you?

A. Yes.

MR. CARR: At this time, Mr. Stogner, we would move the admission into evidence of Texaco Exhibits 1 through 4 and 6.

EXAMINER STOGNER: Any objection?

Exhibits 1 through 4 and Exhibit Number 6 will be admitted into evidence at this time.

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

EXAMINER STOGNER: Thank you, Mr. Carr.

Mr. Bruce?

EXAMINATION

BY MR. BRUCE:

Q. Mr. Uhl, could Texaco have drilled its Levers Number 2 closer to the -- or further to the north than it did?

A. No, we couldn't, and the main reason being, if you look on one of the maps here, there's a little squiggly line going through Lot Number 2, the south half of Lot Number 3 and through Lot Number 5. That's a draw that's going through the area. We're restricted by the BLM from going to the north.

We originally planned on going 1650 from the

north, 1650 from the west, but because of service considerations and because of the BLM, we were forced to move to the south.

Q. Okay. Could you have sidetracked the well and gone --

A. Yes, but --

Q. -- directionally drilled --

A. Yes, but it would have cost extra money.

Q. Okay. Now --

A. You can see that blue line going through there, for your reference.

Q. Yeah, how wide is the draw? I see the line.

A. That draw is fairly wide going in through there. It's -- again, we had to move our location almost 900 feet to the south because of that draw, to be in compliance with the -- And you know the BLM.

Q. Could you have drilled not just further north, but could you have drilled further to the east and then the north?

A. If you drill to the east and north, you can see over there -- And in order to comply with the 1650-foot setback, you're basically going south of those -- one, two, three, four lots there, and east of the 4, 5, 12 and 13 lots, like so. So you see that we're restricted to start off with.

We could have scrunched a little bit over into 7, over into Lot 7 over there, but then we start moving downdip. The trick is to stay as far updip as possible in this field. And since at that time is that it was a little bit of an unknown how far to the north we could push the field.

Q. Okay. So moving away from your Number 1 well, then, was -- added to the risk?

A. Right. This project was based purely on geology, and which -- for a little bit of background information, this area was originally mapped by Keith Williams, back in 1980, and it was probably a lot of his work data that I based my work on.

Q. And that was successful?

A. Yes, it was.

Q. Did Texaco own an interest in Section 1 in the past?

A. We have a -- We own an interest, I believe, in Lot -- I can't see that it's on my map, but I think it's Lot 29.

Q. 29 or somewhere in --

A. Yeah, somewhere --

Q. -- somewhere in the proposed -- somewhere in this proposed well unit --

A. Right --

Q. -- that we're talking about?

A. -- immediately south of that. I believe we farmed out to Faskens on that.

Q. Okay.

A. That was before my time working, so I'm not entirely sure what the legal ram- -- what the land arrangements were.

Q. Okay. Would it be fair to say Texaco didn't see any potential in Section 1 at that time?

A. Not in that part of the section.

Q. Well, you couldn't have drilled a well just on one lot, though?

A. No.

Q. You couldn't have drilled a 40-acre well?

A. But again, we've -- I believe we farmed out on that location.

Q. How many acres is in Texaco's well unit, Section 12?

A. I believe we have 632 acres, which is consistent with a normal -- essentially, they allow eight acres, plus or minus, from the 640, and we're at 632.

Q. Okay. Have either of the Texaco wells ever had a penalty assessed against them, a production like we're talking about today?

A. No because, again, within those eight-acre

variances there's no production penalty.

Q. Do you have any opinion what the drainage area of a typical Morrow well in the Catclaw Draw Pool is?

A. Well, based on the Number 1 well and based on simply the lower Morrow C sand, it appears that it's -- as if it could be a fairly significant area, it could be up to 640 acres.

Q. Does Texaco have any seismic in this area?

A. We have -- We've got a couple of 2-D lines, and that's it.

Q. You don't have any 3-D seismic?

A. No, we have no 3-D seismic.

Q. Now, you listened to Fasken's testimony --

A. Yes.

Q. -- yesterday, didn't you?

They showed an interpretation that there is this S-shaped fault. Do you agree that that would separate the Mewbourne and Texaco wells?

A. Are you trying to say that I should accept Fasken's structural interpretation?

Q. Do you?

A. I don't have the seismic, I can't comment on that, and that's Fasken's observation.

Q. Looking at your Exception 1 [*sic*] --

A. On which one?

Q. Exhibit 1.

A. Yeah.

Q. You know, you show a reservoir that trends more northwest-southeast; is that correct?

A. That's correct.

Q. Would that be the preferential drainage direction?

A. That's what I believe to be.

Q. And Mewbourne's location is actually to the northeast of you; is that correct?

A. That's correct.

Q. Now, looking at Mewbourne's location, would you rather be close to or some distance away from the Fasken well to the north, if you were drilling that well?

A. Excuse me?

Q. Looking at your Exhibit 1, the Fasken well to the north where you have six feet marked --

A. Oh, the Fasken well.

Q. The old Fasken well.

A. Right, I'd rather be between my well and the Fasken well. The Fasken well was -- In this particular zone, this well did not -- the Fasken well did not encounter any water. So you know you don't have a water problem within that B zone.

But it was skinny on the porosity, so you know

that you want to move between the two wells.

Q. You don't want to be too close to it?

A. As far as where that limit is, is that I can't say based on well control. I can say based on my map, but again, that's interpretation.

Q. Okay. But I mean, being -- It increases the risk to move further north?

A. To move further north?

Q. Or north-northeast?

A. North -- The closer that you move to the Fasken well, the greater risk that you have.

Q. Now, you show this -- The way you show it, there could -- as I look at your Exhibit 1, there could be as much or more volume in this particular Morrow zone on Section 1 as in Section 12; is that correct?

A. Yeah, and the way that I have it mapped, there could also be a better location in the Fasken proposed location. But this is my interpretation.

Q. But you see no need -- you see no need to -- You've granted a waiver to Fasken; is that correct?

A. We granted a waiver to Fasken because we're not the affected party to that well being drilled, whereas we're being affected by the Mewbourne proposed location.

Q. But you don't see any need to penalize Fasken just based on it having only a half section of land?

A. Again, we're not the affected party there.

Q. I mean, that -- the acreage doesn't come into play?

A. The acreage doesn't come into play. We're not the affected party, so I can't comment on that.

Q. But a well at the Fasken location, wouldn't that have a better chance of draining to the southeast, toward the Texaco location, than the Mewbourne well?

A. It probably does. The way I have it mapped is that I'm more worried about the Fasken location than I am the Mewbourne, to tell you the truth.

Q. And yet you've granted them a waiver?

A. Again, we're not the affected party.

Q. Just a second, Mr. Uhl, and I'll finish up here.

A. Okay.

Q. In looking at -- I think it's your Exhibit 6, this chart, what -- looking at each well, what is the line pressure for each of these wells? Do you know?

A. I didn't have that information to draw from.

Q. Are the flowing tubing pressures wide open against line pressures?

A. I didn't have that information.

Q. Do you know whether by opening the choke the wells could have produced a greater percentage of CAOF?

A. Produced a greater percentage of -- Again, all

I'm dealing here is taking the State information and presenting the State information.

Q. Now, of this calculated absolute open flow versus what it produced, some of these wells you put in are at the time when this field was prorated. Do you have any -- What is the effect of prorationing on these numbers you give us here?

A. The effect of prorationing is basically -- well, from the date in here is that you can see that there seems to be two periods of activity here.

There's your initial activity where most of these wells are produced from the A zone during that prorationing period. There's a period in there where there's a brief infill period during the -- where most of these B zones were produced in here.

As far as the -- Go ahead, you have a question.

Q. My question is simply, what percentage of this production here was affected by prorationing? In other words, what were the proration schedules back then, what were the wells allowed to produce as opposed to what they could actually produce?

A. I don't have that information. I imagine it was for market conditions.

Q. So you really can't tell from this whether or not some of these wells, this might have been prorated and

couldn't produce what -- might have only been able to produce a small fraction of what --

A. From Mr. Williams' testimony yesterday, he didn't think that any of the wells were held back by prorationing, that there were no penalties assessed.

Q. If these wells had not been choked back, could they have produced more?

A. Really, what -- Again, what the chart is saying is that the first year's production, compared to the AOF, there's a strong discrepancy there.

Q. Okay, but they could have produced more if they wouldn't have been choked back?

A. If the wells were not choked back, I doubt it. I doubt whether it would be significant.

Q. Why is that?

A. Because wells deplete, pressure depletes. Take, for example, the Texaco well there, 29 million a day. First year's production was 4 million a day. Are you trying to say that well could have produced 29 million a day for the first year?

Q. That -- Once again, that well was during the period the pool was prorated?

A. That well was drilled prior to prorationing. The prorationing existed in 1974. That well was drilled in 1972.

Q. The final questions on your Exhibit 3, are these the only faults you see in the area? Are there others?

A. That fault is based on well control. That's -- The only reason that I put a fault in there was to try to delineate what the western extent of the reservoir -- what the western extent of the structure was.

As far as the cross fault down there, the minor cross fault down there to the south, that was based on more well control to make the contouring a little more -- to flow a little easier through that area. There's a -- It's a possibility that there could be more faults in the area. But I did not elect to put any faults in because I didn't feel that you had to.

If I had seismic 3-D data I might do it a little differently, but I didn't.

I believe that structure map explains the wells fairly well.

Q. Have you done any 3-D seismic in this area, any 3-D seismic --

A. Not in this area, no.

Q. -- exploration?

That's all I have, Mr. Examiner.

EXAMINER STOGNER: Thank you, Mr. Bruce.

Mr. Kellahin?

MR. KELLAHIN: Thank you, Mr. Examiner.

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Uhl, sir, let's go through your exhibits. Would you start with the first one, Number 1?

A. Okay.

Q. As I understand your net pay isopach, at the Levers 2 location you have calculated 18 feet of net pay for this package?

A. That's correct.

Q. What's your estimate of the thickness at the Mewbourne-proposed location?

A. Again, from the map, I have greater than 10 feet. It could be 12 feet, it could be 8 feet, it could be 15 feet in that location.

Q. On this mapping you have some smaller shaded contour lines within the 10-foot contour lines. Are those on 2-foot?

A. That's on -- Yeah, if you look at the legend down in the lower-right part of the map, that's a 2-foot contour interval.

Q. So as I move interior to the red line --

A. That's correct.

Q. -- the Mewbourne location falls somewhere between the 10 and the 12 foot.

A. Right, and so if you would say that this map is

exactly the way that you're going to encounter, it should be 11 feet.

Q. And this, with your available data, is your best interpretation, using your experience and --

A. That's correct.

Q. -- and education?

All right. When we look at the Fasken location --

A. Uh-huh.

Q. -- it appears to be slightly inside of the 18-foot contour line, so it's 18-plus feet?

A. I have -- yeah, right, I have somewhere around -- if I have this location correct, I have that right around the 18-foot contour.

Q. If you were the geologist responsible for choosing between the Fasken location and the Mewbourne location for this spacing unit, using this map, then, there's a substantial preference for the Fasken location under this interpretation; is that not true?

A. Could you restate that?

Q. Sure. It's your responsibility to choose between the Fasken location and the Mewbourne location with regards to the sand package on Exhibit 1?

A. Uh-huh.

Q. And you're using thickness as your criteria?

A. The only criteria.

Q. Yes, sir. Then under this interpretation, Fasken's is the preferable location, is it not?

A. I really didn't want to get into --

Q. You're one of the few experts we have here, Mr. Uhl, to help us decide what's --

A. According to the way I have it mapped is that that would be a more preferred location.

Q. Now, your interpretation is exclusive of consideration of any Cisco potential, right?

A. That's correct.

Q. Fasken was trying to package a Cisco effort into this deal at their location, if I remember right.

A. That's correct. Based on the well control that I had available to me at that time, I did not think that the Cisco was a viable target in that area.

Q. So focusing solely on this portion of the Morrow, then, if you're choosing, the Fasken location is the better location of the two?

A. Based on solely that map.

Q. Yes, sir.

A. Right.

Q. Okay. Let's look at the second map, Exhibit 2. Under this interpretation the Levers 2 has got 14 feet, I think is what you've got here?

A. That's correct.

Q. And when I look over at the Mewbourne location it's on the 10-foot line?

A. That's correct.

Q. And when I look at the Fasken location it's in excess of the 16-foot contour line?

A. That's the way I have it mapped.

Q. So if I'm using this as my criteria for ranking the order of preference between the Fasken location and the Mewbourne location, the Fasken location wins?

A. It looks better, based on, solely, that map.

Q. Okay. When we look at the structure map --

A. Uh-huh.

Q. -- in addition to sand thickness and packaging the multiple thicknesses together --

A. Uh-huh.

Q. -- to give you your greatest chance, there's a structural component to this portion of the reservoir, is there not?

A. That's very important in several of the sands.

Q. When we look at the structural relationship here --

A. Uh-huh.

Q. -- have you identified or approximated a gas-water contact?

A. I have on the A sand, I'm a little familiar with the C sand and on the B sand, that there really does come into play.

Q. All right, let's do it on the A sand. Can you use this structure map, Exhibit 3, to show us where you approximate the gas-water contact, using the structure contour map?

A. The Continental Number 2 well in Section 2, the southeast corner of Section 2, tested gas plus water and quickly watered out within that -- within the A sand. So I would assume, based on my knowledge, that that is on a gas-water contact.

Q. I'm sorry, you're going to have to help me. I'm lost on your map.

A. Okay, that's in the southeast corner of Section 2, the Continental well. It's called the WD Number 2 right now, water disposal --

Q. Over on the west side. I'm on the wrong side of the map. Okay. On the west side?

A. Right. This well.

Q. Yes, sir, minus 6863?

A. That encountered -- That tested 2.9 million a day gas from the A zone.

Q. Okay.

A. And it quickly watered out.

Q. Where would the A zone interval be on the structure map?

A. I would assume that that's on the gas-water contact, and you would have to follow that contour around. So it would be a little downdip of that bold contour line, there would be a gas-water contact in the A zone.

Q. Okay. Does the gas-water contact, in your opinion, affect any of the other sand packages in the Morrow?

A. It affects the C sands also, but that doesn't come into play as much on the structure as we see on the A sand. And that's further downdip.

Q. Is there a structural advantage to the Levers 2 well, in relation to the Mewbourne location?

A. Right, according to the way I have it mapped, we should be somewhere around 50 foot updip of their well.

Q. On the eastern side of the reservoir, where would the gas-water contact be?

A. The eastern side of what reservoir?

Q. We're showing the south half of Section 1, this spacing unit.

A. On which reservoir, though?

Q. On the B reservoir.

A. On the B reservoir there's not a gas-water contact that I have looked at in this area.

Q. Okay. Why did you express a while ago that you're more fearful of competition from a well at the Fasken location, even though it's a standard distance back from the common line, than you are from competition if the Mewbourne location is drilled?

A. Because I believe the reservoir quality is better and that you can drain a more significant area.

Q. At the Fasken location?

A. On several of the sands.

MR. KELLAHIN: Thank you.

EXAMINER STOGNER: Thank you, Mr. Kellahin.

Mr. Carr, redirect?

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Uhl, following up on Mr. Kellahin's question, you just stated that you're more concerned about the Fasken location in terms of its potential for draining Section 12?

A. Right, but again, that's more than 1650 feet away from the lease line on our section, and --

Q. How close are they? Do you know?

A. I haven't --

Q. Is it substantially more than --

A. Yeah.

Q. -- 1650 feet?

A. Hang on for a minute. That's almost an entire

section away.

Q. Is the distance from your lease line the reason that Texaco believes it is not an affected party?

A. That's the sole reason.

Q. Is it Texaco's policy to object to wells being proposed by offsetting operators that are more than a standard setback from their acreage?

A. No, sitting through the testimony here the last few days, I could have objected to several if that was the case.

MR. CARR: All right, that's all I have. Thank you.

EXAMINER STOGNER: Thank you, Mr. Carr.

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Uhl, early in the direct examination by Mr. Carr you had stated that Texaco had drilled that Number 2 well --

A. That's -- Yeah.

Q. -- and you would expect everybody to abide by the 1650 rule; is that correct?

A. I expected that if we followed the field rules, that an offset operator should also follow the field rules.

Q. Interesting. How do you explain for the Number 1 location?

A. The Number 1 location was drilled prior to the adoption of the field rules, back in 1972.

Q. What were the field rules in 1972?

A. In 1972, I don't know. That was before my time.

Q. But it's unorthodox now?

A. It's unorthodox now, but then so are a lot of the other locations in there, because there was a brief period of time where there was 320-acre spacing, and a 660 setback was acceptable at that time, where it's not acceptable now.

Q. When the 1650 was adopted, should they have gotten a penalty?

A. Should they have gotten a penalty?

Q. Yeah.

A. Under prorationing?

Q. Yeah.

A. I think you'd almost have to have a complete hearing of the field in order to adopt something like that.

Q. Well, that's what we're here today --

A. Yeah, but then --

Q. -- and you're proposing some penalties here, and whether there's a mechanism to do it and that's reinstituting prorationing.

A. Uh-huh.

Q. That's what we're here today for.

A. Is that really the scope of this?

Q. You bet your -- You bet it is. And what makes you think it isn't? Mr. Uhl? What makes you think it isn't? Answer my question. What makes you think instituting of gas prorationing is not an issue at this point?

A. Really, all we're trying to do is affect the drainage of a well immediately offsetting us.

Q. And how can you do that? Isn't prorationing a tool to do that?

A. Yes.

EXAMINER STOGNER: Thank you. No questions.

MR. CARR: At this time we'll call our engineering witness, Mr. Bittel.

EXAMINER STOGNER: Okay.

KEVIN BITTEL,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. My name is Kevin Bittel.

Q. By whom are you employed?

A. Texaco, Incorporated.

Q. And where do you reside?

A. Highlands Ranch, Colorado.

Q. What is your current position with Texaco?

A. I'm a petroleum engineer.

Q. Have you previously testified before this Division?

A. No, I have not.

Q. Could you summarize your educational background?

A. I received a BS degree from the University of Kansas back in 1981.

Q. And since receiving that degree, for whom have you worked?

A. All those years with Texaco.

Q. Are you familiar with the Application filed in this case on behalf of both Fasken and Mewbourne?

A. Yes, I am.

Q. And are you prepared to recommend a production penalty on the wells -- or on the Mewbourne well at this time?

A. Yes, just the Mewbourne well.

MR. CARR: Mr. Stogner, at this time we tender Mr. Bittel as an expert petroleum engineer.

EXAMINER STOGNER: Any objection? Mr. Bittel is so qualified.

Q. (By Mr. Carr) Mr. Bittel, let's go to what has been marked for identification as Texaco Exhibit Number 5.

A. Yes.

Q. What is this?

A. The first page, the acreage factor, Mewbourne seeks a nonstandard gas proration unit of 297.88 acres, and the standard proration unit is 640 acres. This calculates to a 46.5-percent acreage factor or a 53.5-percent penalty. It must be applied prior to an unorthodox location penalty.

Q. So this is one method of imposing a penalty on a well on a nonstandard spacing unit in this pool; is that right?

A. Yes.

Q. All right. What does the next page show?

A. The second page, labeled "Recommended Penalty", is the basic setback from the standard -- variance from the basic setback. The standard setback is 1650 from a lease line. This calculated penalty is 60 percent.

A 660-foot -- Okay.

Q. Go ahead.

A. 660 feet is approximately 60 percent closer than 1650.

Q. And now what is the third page of this exhibit, page 5- -- Exhibit 5C?

A. The third page is the proposed allowable factor.

Q. And how did you get this?

A. Okay, this is -- It was calculated by the product of the acreage factor, multiplied by 1 minus the various

setback penalty. The calculated allowable factor is 18.6 percent, or 81.4-percent penalty.

Q. And is that what, in effect, you're recommending here today?

A. Yes.

Q. And so the well would be permitted to produce 18.6 percent of some number. What number do you recommend we use?

A. We really had a struggle with this issue, and the penalty should be applied to the well's maximum flow capacity at full-line conditions, not open flow potential, calculated open flow potential.

Q. Now, if this kind of a penalty is, in fact, imposed, 18.6 percent, and the well that Mewbourne proposes was able to, in fact, produce 52 percent of the calculated open flow during the first year, this would still be, in fact, a meaningful penalty, would it not? It would have the net effect of restricting production from that well; isn't that right?

A. It would restrict some production but not very much. Calculated open flow, I feel, is not realistic because you never could -- Theoretically, I don't think you could produce your oil calculated open flow very easily. Our flow line pressure is almost 600 pound.

Q. If, in fact, the well that Mewbourne proposes to

drill was only able to produce at, say, 10 percent over a year of its calculated absolute open flow, this would be no penalty at all; isn't that right?

A. It still would be a major advantage over actual sales conditions.

Q. You have been wrestling with how to apply a penalty in a nonprorated pool of this nature, have you not?

A. Yes.

Q. You've contacted the Artesia District Office?

A. Correct.

Q. You've contacted me concerning the status of prorationing in the reservoir?

A. Yes.

Q. Isn't the concern of Texaco that whatever penalty is imposed, in effect, be a meaningful penalty?

A. Yes, we are.

Q. And if that required the reinstitution of prorationing, that would be a way to go about imposing a penalty; isn't that true?

A. If prorationing was reinstated?

Q. Yes.

A. Yes.

Q. If we look at the well in Section 12, the Levers Number 2 --

A. Yes.

Q. -- what was its initial absolute open flow?

A. 9.48 million.

Q. And at what rate are you able to produce that well?

A. We're currently producing around a little over 4 million a day.

Q. Is it Texaco's recommendation that if a calculated or an absolute open flow figure is used, that to offset the advantage being gained on its location that a penalty -- or that an allowable factor of 18.6 percent be approved by this Division?

A. Yes.

Q. That's your recommendation?

A. Yes.

Q. Do you believe that a penalty of this magnitude is necessary if you're using an absolute open flow figure to effectively offset the advantage gained by the unorthodox location?

A. We want to apply it the absolute open flow?

Q. Yes.

A. I'd rather apply it to the maximum flow capacity.

Q. But if you're doing that, is this the magnitude of penalty that's required to be meaningful?

A. Yes, this penalty is necessary to minimize our drainage from our acreage and protect our correlative

rights.

Q. Was Exhibit 5 prepared by you?

A. Yes, it was.

MR. CARR: Mr. Stogner, we would move the admission of Texaco Exhibit 5.

EXAMINER STOGNER: Any objections?

Exhibit Number 5 and subparts will be admitted into evidence at this time.

MR. CARR: That concludes my direct examination of Mr. Bittel.

EXAMINER STOGNER: Thank you, Mr. Carr.

Mr. Bruce, your witness.

EXAMINATION

BY MR. BRUCE:

Q. Mr. Bittel, what is the history of the flowing tubing pressure of the Levers Number 2 over the last nine months?

A. I really don't know what it has been over the last nine months; I just know what it is currently. It's about 1100 pounds.

Q. You don't have any history on that well?

A. There's history, but I'm not aware of it. That's handled by the area office.

Q. Okay, so you're operating in a void here on the history of the well?

A. I know we make 4 million a day. I know -- I mean, I assume our flowing tubing pressure was higher than 1100 pounds initially. But I did not ask the area that question.

Q. Could you put a compressor on that well and produce more?

A. We are -- We're pretty much max'd out at full-volume conditions. Our purchaser wouldn't take more gas than he is right now?

Q. Do you have any idea of what reserves have been produced to date from the Levers Number 2?

A. We made a little over a BCF today.

Q. Do you know if that's coming from the lower Morrow or middle Morrow?

A. I would say that's coming mostly from the middle zone.

Q. Okay. Do you have any idea what total reserves you expect to recover from that well?

A. That's confidential information, and I will -- I think my reserves are.

EXAMINER STOGNER: Hang on. What was that answer again?

THE WITNESS: I think what I predict my well can make should be confidential information, I mean, within Texaco only. Can I say that?

EXAMINER STOGNER: You can say anything --

MR. BRUCE: They're asking for a pretty huge penalty here. I would ask that he be requested to answer that question.

EXAMINER STOGNER: Mr. Carr?

MR. CARR: I think that from a decline-curve basis, what you see ultimately being the recovery of your well is probably an appropriate -- I mean, it's --

THE WITNESS: Okay, since we have not --

EXAMINER STOGNER: I'm glad you said that. Thank you.

THE WITNESS: The well has not exhibited a decline yet, so it would be awfully hard to predict a reserve recovery from this well right now. Right now, I'd have to maybe say 3-plus BCF from the B zone only.

Q. (By Mr. Bruce) So your estimate isn't any different than Mr. Montgomery's?

A. I remember Mr. Montgomery's. I think it was -- He said about 3 BCF, yes.

Q. Have you used any material balance calculations to estimate reserves in this well?

A. No, I haven't. Actually, I was just --

Q. With the -- I mean, you know, you've got a declining flowing tubing pressure; you've already said that.

A. Yeah. But again, I actually didn't ask the area for their full line pressure prior, and I was an engineer of record at that time when this well was booked.

Q. So you don't know?

A. Not for sure.

Q. Have you made a calculation volumetrically of how much gas is in place, say, on the -- I guess what's called the B1 reservoir under Texaco's section, as opposed to Section 1?

A. I have no -- I did not calculate what's under Section 1.

Q. What about Section 12?

A. Section 12? For B?

Q. Yeah, I'm looking --

A. The only volumetric calculations I have done --

Q. -- or B1, yeah, what your geologist calls the B1.

A. I've only done some volumetric calculations personally by myself for the A -- no, for the C zone around the Number 1 well, not the Number 2.

Q. And what were they for the C zone?

A. I figured that the Number 1 could possibly drain 640 acres in the C interval and...

Q. So that's just -- that's the old well, the Number 1?

A. Yes.

Q. So that one might be draining 640 acres --

A. -- out of the C interval.

Q. -- out of the C interval.

A. Based on the -- That's also based on the fact that the drill stem test showed a significant depletion in the Number 2 --

Q. Is the -- So how about the Number 2? Could that drain 640 acres?

A. It's a possibility. They can drain up to maybe 640 acres, maybe less, depending on their permeability, porosity, and those factors.

Q. And so you might right now be draining Section 1?

A. It's a possibility.

Q. Once again, do you agree that the drainage would be preferentially -- would be to the northwest, based on your geologists?

A. At what interval, the A or the B? The C?

Q. Well, looking at the B1 and the C1, the two maps he has here --

A. It's a possibility. I can't really say. But I would have to say it's a possibility.

Q. Well, would it be more likely along what your geologist mapped, northwest to southeast, or preferential drainage toward the Mewbourne location to the northeast?

A. I would say, based on his map, it's thicker

toward Fasken's location, probably more north, but again, that's based on a lot of assumptions.

Q. Okay, what about drainage -- Do you have any drainage figures in the B1 zone?

A. No, I have not.

Q. Do you have any DST pressures in the B1 -- I mean the Number 2 well, Levers Number 2 well?

A. Well, the state record for flowing the shut-in tubing pressure is 2900 pounds on the four-point.

Q. What about the DST?

A. We did not run a DST in the B zone.

Q. What about in the C zone?

A. The C was 1360 -- 1360, 1350, give or take.

Q. Do you have any estimate of pressure in the --

A. The A zone or --

Q. In the Number 2 well in the B zone?

A. Initially, it was 2900 pounds shut-in tubing pressure at day one. We have not done any pressure since that time. That's surface pressure.

Q. Now, what is -- You know, do you have any information on the flowing tubing history of the Levers Number 2 well?

A. The Levers Number 2 again?

Q. Yeah. You don't --

A. I just told you, all I really, truly know is the

latest -- currently 1100 pounds pressure. I would have to say that it was higher originally, had to be.

Q. Does Texaco think that the Levers Number 2 well is producing incremental reserves in both the C1 and the B1 zones?

A. We have them commingled right now. Since the C is lower pressure, I would have to say that the C is not currently producing -- not right now.

Q. But I mean --

A. Okay.

Q. -- compared with the Number 1 well, are you getting reserves out of the Number 2 well that you weren't getting out of the Number 1 well?

A. We'll get a small incremental reserves. I mean, that I don't know. I'd have to recalculate -- I'd have to calculate it.

Q. I mean, small -- I mean, are you talking the 3 BCF you're getting or a smaller number?

A. Okay, I'd say a lot smaller number than that, because the original pressure is only 1360.

Q. And just so we're on the same thing --

A. Okay.

Q. -- are you seeing any incremental reserves from the Number 1 to the Number 2 well in the C zone, and then again the same question with respect to the B zone?

A. Yes, the B, because that's where the zone's making. Apparently the B was very -- really poorly developed in Number 1 there, for it made very small reserves, probably.

The C zone, due to the fact that it's -- starting at 1300 -- you know, showing highs from the original pressure of about -- you know, original pressure of C, around 4500, the incremental reserves will be quite small.

Q. Do you agree that the Fasken well in Section 1 was a poor well? Not the proposed well; the old well.

A. Now run this by me again? I'm sorry.

Q. The Fasken well in Unit P of Section 1, would you characterize that as a poor well?

A. Fasken?

Q. The Fasken well.

A. The original Fasken well, way off --

Q. Yes.

A. Yeah, it only -- Well, it made like 300 million, I think.

Q. Would you agree with Mr. Uhl that you would want to move away from that well?

A. Probably.

Q. Now, your Exhibit 6, I'm not sure who prepared that.

A. Mr. Uhl prepared it.

Q. Could you have opened the choke on Texaco's wells and produced a higher percentage of the calculated absolute open flow?

A. Which one?

Q. Levers Number 1, Number 2?

A. Number 1, I mean, I really -- I have no idea about the Number 1.

The Number 2 could possibly produce more if we could sell more through the sales line.

Q. Okay. So it's a matter of Texaco's sales contract?

A. The pipeline demand, I mean, we're -- you know, everybody lives within pipeline demand.

Q. Now, let's go to your Exhibit 5.

A. Okay.

Q. The first page, Mewbourne's proposed location is unorthodox, correct?

A. Correct.

Q. So is Fasken's?

A. That's correct.

Q. Shouldn't this same, to be consistent, acreage factor be assessed against Fasken's acreage, as against Mewbourne's?

A. Like Mr. Uhl said earlier, we're not in the business to protest all locations here. I think their

location is 2075 feet away from our well.

Q. But you've already spoken of 640-acre drainage, and -- at least in one of these zones, and those are the pool rules. Texaco keeps saying, These are the pool rules, 640 acres.

A. Like Mr. Uhl said, we could apply that penalty to them too. However, you know, we're not being affected by the setback. Therefore, we chose not to.

Q. Okay. So even though Mr. Uhl is more fearful of the Fasken location and the pool rules provide for 640 acres, no penalty is necessary against the Fasken location?

A. We do not seek one, no. We thought -- We were not the affected party. It was up to Penwell to do that.

Q. Are these -- You know, you've talked about drainage. Are these wells draining over a large area?

A. They can.

Q. They can, okay.

A. I mean...

Q. You know, for Morrow, at least, are these channels fairly wide?

A. I would refer that to the geologist. Looking at this map, it looks like it possibly is, at least this zone, one zone is.

Q. This allowable factor you're proposed, would Texaco drill a well with this type of penalty on it?

A. That's debatable. We're not seeking to do that.

Q. Well, I mean you're proposing it against another interest owner. Do you expect anyone to drill with this type of penalty?

A. Possibly no. However, if you move back to the standard setback rules, we --

Q. Would you propose to your management that Mewbourne move another 1000 feet to the north, close to that poor Fasken well, to drill?

A. But there's other possible legal locations within your proposed unit.

Q. Okay. What legal location can we have in Mewbourne's proposal?

A. Could you drill 1650/1650? Is that possible?

Q. I'm asking you.

A. All I'm trying to do is protect Texaco's correlative rights and --

Q. And what I'm asking is, with this penalty, number one, would you drill? And you say probably not. But then I'm asking you, would move it, Mewbourne's location, north, closer to that poorer Fasken well?

A. I would have to say no. I would try to move it back west. You could -- Couldn't you move to a legal location going west and north? At least be 1650 feet setback from the south line.

Q. Do you have any estimate of what, perhaps, a well at Mewbourne's location might -- what its initial potential might be?

A. I do not -- it was not my -- did not, no, I did not, did not try to calculate one.

Q. So let me get an idea of what you're proposing here. If Mewbourne drilled a well that had an initial calculated absolute open flow of 2 million a day, what you're proposing is that -- or what you're saying is that the deliverability would be about half that?

A. Probably.

Q. And then this allowable that's 18-percent allowable would be assessed against that?

A. Yes.

Q. So Mewbourne could produce 200,000 a day?

A. If your well is that poor, originally.

Q. Okay. Would Texaco drill a well with that type of production?

A. No.

MR. BRUCE: I don't have anything further.

EXAMINER STOGNER: Thank you, Mr. Bruce.

Mr. Kellahin, your witness.

MR. KELLAHIN: No questions, thank you.

EXAMINER STOGNER: Mr. Carr, redirect?

MR. CARR: No questions.

EXAMINER STOGNER: No questions.

Let's take about a 10-minute recess.

(Thereupon, a recess was taken at 2:05 p.m.)

(The following proceedings had at 2:14 p.m.)

EXAMINER STOGNER: Mr. Carr?

MR. CARR: Mr. Stogner, that concludes our presentation. I do have a brief closing.

EXAMINER STOGNER: Okay, is there any other recalls of witnesses at this time?

MR. BRUCE: No, sir.

EXAMINER STOGNER: Mr. Kellahin?

MR. KELLAHIN: No, Mr. Examiner.

EXAMINER STOGNER: Okay, Mr. Carr, I'll allow you to begin, then Mr. Kellahin, then you may end up, Mr. Bruce.

Mr. Carr?

MR. CARR: Mr. Stogner, I'm getting to a point in my life where my mind fails me on lots of things, but I can remember yesterday.

And yesterday we were in a case where we were facing a fault and it seemed fairly clear February the 20th, maybe not so clear yesterday.

You've got a couple of cases, really, before you here today, one between Mewbourne and Fasken and another one between Texaco and Mewbourne.

Fortunately for Texaco, we don't have to get into the other dispute, and I'll tell you why.

If, whatever they do on the north side of our section line, if they ultimately decide to drill a well at the Fasken location and if the Fasken interpretation presented to you here today is right, they have very little impact on Texaco, and they should be permitted to go drill the well. And that's all there is to that.

Even the Fasken witnesses, Mr. Stogner, said they would perhaps drill at the Mewbourne location. And if they do there, we're truly concerned. And we're concerned because we believe that well is unfairly encroaching on us.

I think it's very clear that Texaco in 12 has in its Levers Number 2 a very, very good well, and we're over 2400 feet back from that common line.

And Mewbourne, if a well is drilled there, is in a -- They're only 660 feet from that line. To try and draw a no-flow boundary, and admittedly -- We won't know where that would be until the well is drilled, but that no-flow boundary would be farther onto the Texaco acreage with the well 660 from the lease line than it would be if it was a standard location.

And if it is drilled at that location, the opportunity to offset drainage from their well with counterdrainage is substantially reduced. And so for that

reason, we are truly concerned about the Mewbourne location.

Now, Mewbourne comes in here and they state, We're here trying to avail ourselves of the opportunity to produce. And that's right, they have a right to do that.

But I submit to you they stop short, because an opportunity to produce means they get to produce what's under their acreage, not what's located under their neighbor's.

Now, when we talked with Mr. Montgomery, he said he thought that there was a chance that the existing Texaco wells were draining the acreage in Section 12. And our testimony shows we felt we were potentially and probably draining all of Section 12.

I think the significance of that is that any suggestion that Texaco go and drill an additional well north in Section 12 really cannot be supported because if we may be draining 1, if we are draining 12, an additional well just for correlative-rights purposes would be wasteful, because it would be unnecessary.

And so we've come in with a penalty. And I think it's fair to say that as we've looked at a penalty we've contacted the District Office, we've reviewed the rules, and perhaps, in fact, the tools to impose penalties in fields like this, fields where there are histories that

have made the rules unique, the tools may not be adequate.

But when we come in here today we're trying to wrestle with what we've got and how to offset the advantage gained by the Mewbourne location and have a meaningful penalty imposed on the well.

And I can tell you that 15 percent of the absolute open flow is no penalty at all, and that a million-a-day guarantee under the well, I would submit, is absurd, because it puts the OCD in the business of guaranteeing people of a minimum level, won't go below that with a penalty, even if you're draining your neighbor, we want the economics to work for you, go drill, even if it's at a location that you really shouldn't be drilling at.

And so we came up with a formula and we put two factors in it. And you know what they are: One is for the amount of acreage and one is for the encroachment.

But I would submit to you that what we propose isn't all that far from what we would do if we were prorating the field. If we implemented prorationing on 640-acre spacing, this unit would have an allowable factor of less than one. That's where we'd start.

And then we'd follow along behind that and further limit the production because of the encroachment they're gaining on the offsetting operator. If we prorate it on 320s we'd start with a smaller number.

So just to say that, you know, we shouldn't look at the acreage, I think that's wrong, because if we try and move toward what would happen under proration I think we'd get to the initial threshold issue being how much acreage have you got that you can commit to your well, and how much reserve that is recoverable do you have under that tract? And then from there we go forward and we try to determine what to do with the encroachment on the neighbor.

And our penalty is substantial, 81.4 percent. We think that's necessary if it's to be meaningful when we look at what wells really have done, when you compare what they've really done in the first year to what the absolute flow on those wells originally was. That penalty would protect Texaco.

And Mewbourne comes in and they say, Yes, but my gosh, would anyone in their right mind drill a well at this location with that kind of a penalty? And I suspect we all know the answer to that question is no.

But that's what happens, I submit, when you're proposing a well and you look at the reservoir quality and the location. And when you weigh those, you really shouldn't be drilling that well there at all.

But at least before they go out to drill, they ought to know that, they ought to know what the real penalty ought to be, and they ought to then be able to make

an informed decision about whether or not that is the prudent place for them to invest their money, whether or not from that location they will really drain their share of the reserves, or the reserves that belong to someone else.

We would ask you to approve both locations but impose a penalty on the location proposed by Mewbourne 660 feet from the south line in Section 1, equal to 81.4 percent of the calculated open flow -- or the absolute open flow on that well, determined by a deliverability test. And we would recommend that those tests be conducted during the first two years of the well's life, every three months.

And that concludes my statement.

MR. CARR: Thank you, Mr. Carr.

Mr. Kellahin?

MR. KELLAHIN: Mr. Examiner, you recognized yesterday that this was a correlative-rights issue under your jurisdiction, to decide what to do about two unorthodox well locations.

There's a simple solution, and then there's a complicated solution.

You and I and the others in here have presented hundreds of cases to you about unorthodox well locations. And we can talk about the complicated solution that Mr. Carr proposes.

It is certainly within your jurisdiction and authority to ask the Director to issue a memorandum or a decision terminating the suspension of gas prorationing in Catclaw Draw, and very quickly you as a regulator can re-establish gas prorationing. You and I and the others know that that is a convenient and effective conservation tool by which you can utilize a portion of it to establish equity for unorthodox well locations.

You can, then, under that frame work take under the task of the rest of the complicated approach, and that is to figure out some kind of penalty factor to impose against the allowables set under the proration system. And we have in past cases, and if you do so in this case, engaged in that complexity, trying to figure out how to establish equity between the Mewbourne location and the Texaco wells.

My approach is a simpler solution, and I think sometimes a simple solution is the best solution.

I will defer to you in your expertise to talk about whether you believe Fasken's seismic interpretation, whether, in fact, that you conclude, as we have concluded, that there is a significant fault that separates the Mewbourne location from any competition by the Texaco well.

I'll leave it to you to decide that Texaco and Fasken agree that the best location in which to protect the

spacing unit in section 1 is the Fasken location. That's the location Texaco fears the most. And why? Under Texaco's own analysis it's the better location.

When you're looking at these two unorthodox locations, you're looking at one which does not have any opposition; the other one does.

The simple solution, Mr. Examiner, is that you approve the location that is not opposed and you deny the location that is.

And with that simple solution, you have the best solution. It avoids triggering prorationing in the pool, it avoids trying to establish equity between this hypothetical no-flow boundary, as Mewbourne and Texaco compete.

Is there anything with the simple solution? I suggest not, sir.

If the fault is as Fasken believes, then those portion of the reserves in the Morrow on the eastern portion of the spacing unit can be deferred. They're not subject to any competition, they're going to stay in the ground until somebody drills another infill well.

The portion of the spacing unit at risk is the western portion. The opportunity to have an advantage, to take into consideration the Cisco is a significant part of Fasken's proposal. We're asking that you take the simple

solution and to approve the Fasken location.

When we try to put this in context of the practice before the Division, I would suggest to you, sir, that it is always a pre-requisite for an unorthodox well location in which there is opposition to determine whether, as an alternative option, there is a location that is standard in dimension to the parties being opposed. Fasken has that location.

In terms of resolving disputes and settling differences, I think you should require the interest owners in this spacing unit to drill the location first that does not have the opposition. The evidence here demonstrates that that, in fact, is the favorable location. Anyway, we would ask for that solution, we think it's appropriate and it provides equity to all parties.

Thank you.

EXAMINER STOGNER: Mr. Bruce?

MR. BRUCE: Well, as I said in my opening yesterday, this is an unusual case.

Both the Applications by Fasken and Mewbourne involve nonstandard units. This is necessitated by unleased federal land, and so I don't think there's any doubt but that a nonstandard unit is necessary and should be approved.

I'm maybe getting ahead of myself here a little

bit, but I fail to understand Texaco's proposal that acreage is extremely important when it comes to penalizing the Mewbourne location but is irrelevant when it comes to Fasken's location. Frankly, I think because of the Division orders establishing what drainage is in this pool, acreage is completely unimportant.

As to the unorthodox location, again, we believe no penalty is required on Mewbourne's location. We've said it before, and we'll say it again: The Division has previously held that these wells are only draining 320 acres. Looking at all these maps that have been presented today, that's what the wells have been -- or the sections have been developed on, and half the wells are unorthodox.

But Texaco says, Rules are rules. How can you say that when every -- virtually every other operator in the pool has benefitted from unorthodox locations?

In addition, the rules require that wells in adjoining sections, if they were to be totally orthodox, would be at least 3300 feet apart. And in fact, the Mewbourne and Texaco wells are 3200 feet apart. Thus any adverse effect on Texaco is minimal.

Now, let's look at Texaco's correlative rights. It's not entitled to all gas under its section; it's entitled to an opportunity to produce it.

They claim that this draw prevented them from

moving further to the north. They could have moved further to the north, further to the east, but they didn't want to, somewhat further to the north. Mr. Uhl said they could have moved into Lot 7, I believe. They wanted to stay close to their existing production.

We believe that Texaco is not at a disadvantage regarding Mewbourne's well. This is especially true if Fasken's geology is correct. If those wells are fault-separated, that will do away with virtually any advantage Mewbourne may have at its application.

Once again, I'm kind of confused. They -- Their geologist says, Fasken's location is a bigger danger to Texaco than Mewbourne's, if they don't even propose a penalty based on acreage. I'm confused.

Again, I note that, the way I looked at them, Fasken's map showed that Mewbourne's location is the best in the Morrow. Their location is based primarily on the Cisco. The faulting they show, as I said again, shows that there will be less pressure depletion from Texaco's well, and it will be the better well.

Now, I did spend a few hours a couple weeks ago looking at orders. I could only find one order assessing a production penalty in this pool. That's R-5893. That based a penalty on productive acreage in the well unit.

Mewbourne's geologist has testified that the

southern third or the southern half, however you refer to it as, of Section 1 is completely prospective in the Morrow. Thus we believe, again, no penalty should be assessed.

Now, if a penalty is assessed, when you're looking at unorthodox locations, yeah, you have to protect correlative rights. But you don't just look at the correlative rights of Texaco; you have to look at the correlative rights of both the Applicant, Mewbourne, and the protesting party.

If a reasonable Morrow well cannot be drilled in Section 1, then based on what Texaco's engineer said, Texaco's going to get those reserves.

In considering the unorthodox location, the Division should come to an equitable decision which protects all the parties. Of course, it must protect the offset owner. But it must not penalize the Applicant, Mewbourne, to such an extent that it's uneconomic to drill the well.

Texaco's proposal is completely unreasonable. At the producing rates they'd be talking about, at whatever location in Section 1, they could never recover the reserves that are under that section.

We believe a more reasonable penalty, as proposed by Mewbourne, if one is assessed, should be assessed in

that magnitude.

Now, regarding the two competing well proposals, Mewbourne and Fasken, you know, Fasken sat on this project for 25 years. It's had its interests for 20, 25 years. It didn't even know about the offsetting Texaco well, until Mewbourne came to it two months ago. If it hadn't been for Mewbourne we wouldn't be here today, because no one would be proposing a well in this section.

Again, these are not, as I see it, competing well proposals; this isn't a compulsory pooling procedure. Mewbourne had the first proposal. The operating agreement says, After the election period the parties shall commence work on the proposed operation. Mewbourne's well was first in time, first in right.

Furthermore, a party who agreed to participate, such as Fasken, shouldn't be allowed to protest that well at this time.

Now, in regard -- As I said yesterday, in regard to the dispute between Mewbourne and Fasken, I don't think geology is the determining factor. Yes, it's important. Yes, the parties want to drill a good location. But the operating agreement between the parties doesn't state that.

We're asking the Division to approve Mewbourne's location and either delay approval of the Fasken

application or approve it with the stipulation that Mewbourne's well be drilled first. Such a decision is in harmony with the operating agreement among the parties. If you take Fasken's position, you will be issuing a decision contrary to the operating agreement among the parties.

One final comment. This came up early yesterday. Fasken wants its well drilled. The only evidence in the record is that they're not an interest owner and that they're not the operator under the operating agreement. They're not a proper applicant, and I believe their case should be dismissed.

Thank you.

EXAMINER STOGNER: This is an unusual case. And each one of you has brought up some issues that I'm going to be faced with. So I'm going to propose an unusual situation here.

I'm going to continue this matter to May 1st -- that's my hearing -- at which time I want each and all to address the issue of a compromise location that is standard, pursuant to the Texaco property, at least 1650 from the south and 1650 from the west. This in lieu of reinstituting prorationing.

I'd suggest, Mr. Carr, that the Midland office be involved, of Texaco in this matter, since it will affect them.

MR. CARR: Yes, sir.

EXAMINER STOGNER: Gone are the days in which I can ask the witness a question and they can tell me the complete history in this pool, unfortunately. What I've seen over the past many years, and unfortunately the new people that have come up never had an opportunity to work with those people. Very unfortunate, most unfortunate.

So you've got to ask yourself, do you want to risk reinstituting? And yes, I will very muchly so reinstitute prorationing, Mr. Uhl, you very muchly better believe it. And I suggest you talk to Mr. Frank Gray in your Midland office and see if you all agree to that.

The penalty in which you proposed, Texaco immediately goes right back into the reinstituted prorationing. And that's the way I read it.

So again, I believe you see what I'm setting everybody up for. Each one of you all has spent two days here in Santa Fe, a lot of expense to come fight each other. Have you really tried to take that expense and come up with something that you can cooperate with?

And it still blows my mind that you guys, professionals, would even consider not coming up with a cooperative effort, and bring it to a lowly state employee to make your decision for you. That really surprises me sometimes.

Gentlemen, be prepared to address that issue on May 1st. I'm hoping we will see this case dismissed, is what I'm truly hoping. Think about the circumstances and what you're asking me to do.

Anything further?

There being none, then I'll see you gentlemen back here on the 1st.

With that, let's take a ten-minute recess, because I've still got some stuff to take care of on the docket.

(Thereupon, these proceedings were concluded at 2:42 p.m.)

* * *

CERTIFICATE OF REPORTER

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

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

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

WITNESS MY HAND AND SEAL April 17th, 1997.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case Nos. 11755 and 11743 heard by me on 17 April 1997.

, Examiner
Oil Conservation Division