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 MERIDIAN OIL INC.

CASE NOS. 10918, ~~10919,~~ 10920, 10921

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: Michael E. Stogner, Hearing Examiner

February 17, 1994

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on February 17, 1994, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, RPR, Certified Court Reporter No. 63, for the State of New Mexico.

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I N D E X

February 17, 1994
Examiner Hearing
CASE NOS. 10918, 10919, 10920, 10921

E X H I B I T S

A P P E A R A N C E S

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

FOR THE APPLICANT: KELLAHIN AND KELLAHIN
117 N. Guadalupe
Santa Fe, New Mexico
BY: W. THOMAS KELLAHIN, ESQ.

EXAMINER STOGNER: The hearing will come to order. I'll call Case 10918, which is the application of Meridian Oil Inc. for downhole commingling, San Juan County, New Mexico.

Call for appearances?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing on behalf of the applicant. We would request permission to consolidate our presentation in this case with the following three cases.

EXAMINER STOGNER: Are there any appearances in this case or the next three cases other than Meridian? At this time, I'll call Cases 10919, which is, again, the application of Meridian; this is for an unorthodox gas well location and downhole commingling; Case 10920 is the application of Meridian Oil Inc. for downhole commingling and an unorthodox gas well location, San Juan County; and Case 10921 is the application of Meridian Oil Inc. for downhole commingling. All four of these cases will be consolidated for purposes of testimony.

At this time, I'll ask your witnesses, Mr. Kellahin, to stand to be sworn. How many do you have?

MR. KELLAHIN: Three.

(Witnesses sworn.)

EXAMINER STOGNER: Mr. Kellahin?

MR. KELLAHIN: Thank you, Mr. Examiner. Mr. Alexander has organized the presentation where there are four separate exhibit books. On top of the exhibit books, we have given you a large spreadsheet where Mr. Alexander has attempted to identify the specific relief he's seeking to have you approve for each of the wells involved for all the cases.

In addition, separate from the hearing exhibit books and from the spreadsheet is the Notice to Offset Operators. Mr. Alexander and I would request permission to provide a supplemental notice, which has already been sent. I've simply not prepared the certificate for him, but Mr. Alexander has notified all those interest owners within the spacing units that might be affected.

In each instance, we are here before you because the interest between the Pictured Cliff and the Fruitland Coal is not common. Had that been common, we might have been able to process these administratively.

In addition, since the time Mr. Alexander and I have filed these applications before you, there

are a couple of changes to be made. In Case 10920, we've requested permission for the C M Morris #100. It's the second-to-last well on the spreadsheet. If you'll delete that well at this time, we'll refile it later. It's not ready to be drilled or recompleted. And so it's easier for us to simply drop that from Case 10920.

EXAMINER STOGNER: That's the C M Morris Well #100?

MR. KELLAHIN: Yes, sir. We are still seeking approval for the Huerfano Unit Com #509, which is the companion well under that case number.

Finally, if you'll look at the spreadsheet and find the second well down, the Neudecker #2, for the coal, the spacing unit, as Mr. Alexander and I applied, it is the east half. It has been reoriented now to be the north half of that section.

All the interest owners to have been notified are the same regardless of the orientation. And so the parties that would be entitled to notice in either instance have received notice. However, the docket does reflect an east-half orientation as opposed to a north half.

I don't know if it requires the formality of reprinting the docket. It would appear to me that

it doesn't. All the parties involved, if they cared, would have come anyway, regardless of the orientation. And the only operator to show any interest at all is Amoco, and there are no interest owners that share in production that have chosen to appear.

And that is the last change with regards to the procedure.

EXAMINER STOGNER: At this time, I won't make any kind of decision on the readvertisement. Let's hear the testimony first. And after we see some additional information, we will readdress that issue at the closing time; so if you'll help me remember it.

MR. KELLAHIN: We're going to attempt to consolidate these and make a general presentation, Mr. Examiner. You can see from the spreadsheet that all except one well, we've dismissed the Morris, the remaining well, the last one is a new drill, everything else is a recompletion with, in each instance, the original well being a Pictured Cliff well, and the requested relief then is to add the Fruitland Coal.

You'll see a note that there are administrative approvals for some of these wells

already in terms of location. You'll find that the Lodewick is off-pattern in the coal. That's an additional approval that we are requesting. And then you'll see, for the last well to be drilled, it is nonstandard both in the PC as well as the Fruitland Coal.

We're presenting to you the same kinds of cases as we presented to you last summer where Mr. Scott Daves, the reservoir engineer, has developed an allocation formula for the recompletions based upon historic production from the PC. And in each instance then he has the calculations and the data to show you the allocation as to the two pools.

Mr. Daves has also done the economic analysis for you so that you'll be satisfied that in each instance, at least one of the pools is marginal. And so it's very much like those cases you processed for Meridian back late this summer in July and August.

MR. STOVALL: Mr. Kellahin, before you start then, if you're through with your opening remarks, is my understanding correct, that Meridian has had a problem with the BLM as far as approval by them on these comminglings? Is that the situation, the ones you referred to, the summer cases?

MR. KELLAHIN: Yes, sir. There are some of those cases this summer that were on federal tracts. And if they're on federal tracts, the BLM has taken the position that, separate and apart from the OCD decisions on commingling, we must submit to the area supervisor for the BLM the same technical data so that the BLM can make an independent judgment on approving the commingling process.

We have taken exception to that issue with the BLM. We've had a state director appeal. The state director has denied our appeal. And we are now preparing the documents to appeal this issue to the Bureau of Land Appeals.

MR. STOVALL: The status of those cases, as far as the BLM is concerned, has the BLM denied the commingling, or has it denied your request for them to consider the OCD technical record as the basis for their approval of the commingling?

MR. KELLAHIN: It's the latter.

MR. STOVALL: Have you had any discussion, and maybe -- I realize your first witness hasn't been identified and sworn in; this may be something he needs to answer, but I'll ask you first -- had any discussion with the BLM about their participating somehow in the process with the OCD so it can be done

in a single process by operator? This is not without precedent. We've done so in NGPA-type proceedings, and I don't know why we couldn't do so here if the BLM wants to take an independent look at the data.

MR. KELLAHIN: Mr. Alexander and I both presented that to the deputy state director of the BLM when that appeal was heard here in Santa Fe, and that is one of the options we urged them to discuss and explore, and we don't know if they've taken any action or initiative on that portion of our request.

MR. STOVALL: Have they been made aware of this hearing today, and did you give them specific information so that they could be here if they so intended?

MR. KELLAHIN: I believe so, and I would have to specifically check. That generally has been our course of conduct is to notify them in some fashion of these hearings.

MR. STOVALL: Something you may want to address with Mr. Alexander. That's all I have.

MR. KELLAHIN: Okay. With that introduction, Mr. Examiner, I'll call Mr. Alan Alexander.

ALAN ALEXANDER,

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

EXAMINATION

BY MR. KELLAHIN:

Q. For the record, sir, would you please state your name and occupation.

A. My name is an Alan Alexander. I'm currently employed with Meridian Oil Inc. in Farmington, New Mexico, as a senior land adviser.

Q. On prior occasions, Mr. Alexander, have you testified as a petroleum land expert with regards to commingling cases pursuant to Division rules where we're seeking to commingle Pictured Cliff to Fruitland coal production?

A. Yes, sir, I have.

Q. As part of your duties and responsibilities, have you undertaken a similar examination for each of the wells in these four cases?

A. Yes, sir, I have.

Q. In addition, on behalf of your company, have you been the representative who has appeared before the Bureau of Land Management with regards to issues of concern with the Bureau of Land Management

concerning these downhole commingling orders?

A. Yes, sir, that's correct.

MR. KELLAHIN: We tender Mr. Alexander as an expert petroleum.

EXAMINER STOGNER: Mr. Alexander is so qualified.

Q. (BY MR. KELLAHIN) We've not identified as an exhibit this spreadsheet, Mr. Alexander, but I think it's very useful. Let's have you start with that. Describe for us in each instance the items that you have identified that require the examiner's action and, particularly, with identifying the code at the bottom of the display.

A. Yes. This spreadsheet, in the spreadsheet we attempted to consolidate all the cases and put a logical format for the types of application, and, more particularly, for any unusual feature that might be in the applications.

You will note that the far left-hand side, we have identified the case number. The next column is the well that's included under that case number. The next column is entitled "Spacing" for both Pictured Cliffs and Fruitland Coal, and we've indicated what the spacing orientation is for both those reservoirs.

The next column is the first field that's involved, or another way of phrasing it would be the first pool or formation.

And the column next to that, we say "Existing Formation." What that means is, is that formation currently completed in this particular wellbore, if it is an existing wellbore.

The Field #2 is simply the second formation that we want to commingle, and it, in all cases, is the Basin-Fruitland Coal Pool.

Next to that we have indicated that one well, the Neudecker #2 well, that reservoir is currently completed in that well, but there is a bridge plug separating the formations at the current time. And in this process we would be asking for permission to remove that bridge plug and to commingle the two formations.

We have provided you also with the location of the individual wells by township, range, section, and unit letter number. And we've also indicated in the next column whether this is a recompletion of an existing well or a new drill well.

The column next to that we have titled it Marginal Formation, and that simply represents the

formation that we feel is the least economic. That is not an entire description of the formations. In some of these cases, both of the formations are actually marginal or noneconomic. We wanted to give you an indication of the one we felt was the least economic at this point in time.

The last two columns address specific nonstandard proration units or nonstandard locations or off-pattern locations. And we have indicated in each instance if that is applicable to each well.

You will note at the bottom of the page that we do have some further descriptions by using footnotes, and they more fully describe some of the abbreviations that were used in the spreadsheet, and I think that they are probably self-explanatory.

Q. Let me address with you the topic of ownership. When we look at the Huerfano Unit wells, we have previously obtained from the Division, after a hearing, the ability to administratively commingle production within the Huerfano Unit. To what extent does that approval apply to any of these cases before the examiner today?

A. We have used that prior order to the extent of simplifying our notifications to the interest owners and the working interest owners that

are within the Huerfano Unit.

The reason we decided to go ahead and bring these cases forward is that all of these wells were developed by the asset management team as one project, plus these Huerfano Unit wells are extremely close and, in some instances, on the border of the Huerfano Unit, and we felt that it's probably more appropriate to go ahead and make notification to the offset owners and to use this format so that everybody was aware of what we were doing.

Q. With regards to offset ownership, not only to the PC well but to the Fruitland Coal well, do you have maps and information in the exhibit book as to all the wells to identify who those interest owners are and where they are located in relation to the spacing unit?

A. Yes, sir, we do.

Q. As a result of that notification, have there been any operators that have registered an objection with you concerning any well?

A. We have one operator, Mr. Tom Dugan, that initially registered an objection, and that was on the Zachry #11 well, and we have since that time worked out our differences with Mr. Dugan. And in that process, the end result of that is that we will

purchase Mr. Dugan's interest in the Pictured Cliffs formation. He only owned an interest in the Pictured Cliffs formation and had some concerns; so we have alleviated that problem, and he no longer has an objection to that application.

Q. Apart from Mr. Dugan and Amoco's interest in the project -- they've entered an appearance -- have any of the other offseting operators or interest owners objected?

A. Not in the applications that we want to go forward with today. I will inform you that on the C M Morris #100 well, the well that we want to dismiss today, we will bring that up later, we have been informed that one of the interest owners in that drill block to the Fruitland Coal, Quintana, has a wellbore only interest in an existing well that we want to plug, and it's making it very difficult for them to join in this process because a new well, they would be eliminated from the ownership.

So we are continuing to work that problem with them. We're confident we'll work it out, and we will bring back that well probably around mid-year.

Q. As part of your notification process, have you identified those interest owners that would share in production but be different between the two pools?

A. Yes, sir, we have.

MR. KELLAHIN: Mr. Examiner, I have not yet provided that to you in the form of a certificate, but at this point I would like to submit to you photocopies of the notice, and then I will substitute after the hearing an organized certificate that more specifically confirms the notification of the interest owners.

Q. Let's pursue that subject. Are there instances between the PC and the Fruitland Coal where there are interest owners that are either not common, or if they are common, they have a different percentage between the two pools?

A. Yes, sir. In every instance that is true, that the interests are different between the two formations, basically because we're dealing with drill blocks that involve multiple leaseholds. We're not dealing with one single leasehold in these particular wells.

Q. Does the notice list I provided Mr. Stovall include all those individuals that would be entitled to notice under that process?

A. Yes, sir, of course, again, with the exception of the Huerfano Unit people that we're relying on our prior order to take care of those

notifications.

Q. As regards to that category where they have a different interest or ownership, have any of those individuals contacted you to object other than Mr. Dugan?

A. No, sir, and other than Quintana and the C M Morris, which, of course, we are deleting from consideration today.

Q. All right, sir. Let's turn to the exhibit book 10918. Are all the exhibit books for the other three cases organized in the same way?

A. Yes, sir, they are.

Q. Let's start with Exhibit 1 in Case 10918 and have you describe for us the exhibits as we turn through the book.

A. Behind exhibit tab No. 1 we have provided the examiner with a copy of our application, and attached to the application are the exhibits that were mailed to each of the parties that we notified in these proceedings.

Q. All right, sir, Exhibit 2.

A. Behind Exhibit 2, we have included, the first map behind Exhibit No. 2, is a more localized reference map. On that map you will see each of the wells that we are talking about this morning.

You will also see the green symbols, although they are quite small, represent existing Fruitland Coal wells, and the red symbols representing existing Pictured Cliff wells in this immediate area.

Immediately behind that locator map, we have provided basically nine section land plats that give a greater detail around each of the proposed wells. These plats show the orientation of both the Fruitland Coal and the Pictured Cliffs formations that we are proposing. They also show existing wells within the nine section areas.

Q. Do you have a plat for the Neudecker 2 well? Followed by that is what, Zachry 11?

A. Yes, sir, Zachry 11, and followed behind that is the Pierce Federal A #1 well.

Q. When we look at Exhibit 3 in each of the books, starting with this exhibit book, what do we find?

A. Behind Exhibit No. 3 we have provided the offset operator owner plats. And on these plats we have indicated the well locations, the orientation of the spacing unit for the Pictured Cliffs and the Fruitland Coal formation, as well as numerically indicated the location and who the offset

owner/operator would be in each instance. And we have separate plats for each of these three wells behind Exhibit No. 3.

Also behind Exhibit No. 3, the last exhibit there for the wells that it is applicable for, we have provided an address, name and address list for the owners that are within the drill blocks that would own an ownership in production. It includes both the royalties and overrides or other burdens.

Q. Are the rest of the exhibit books organized in the same fashion?

A. Yes, sir, they are.

Q. Let's turn to the exhibit, exhibit book in 10919, and let's go back to the plats following exhibit tab No. 2 and look at the specific locator map.

A. Yes. Again, this locator map is identical, and you will see an identical locator map in each of the packets for each case, but behind the locator map, again, we have the specific nine-section land plat that would be pertinent to the well that's included in that case. In this case under Case 10919, we have the Lodewick #1 well.

Q. For each of these recompletions, then, as

the examiner finds the well in the exhibit book, we are taking an existing Pictured Cliff well and going to utilize that well to add to it the Fruitland Coal gas?

A. Yes, in each recompletion well, that is true.

Q. Let's show him an example of the one new drill. If you'll turn to Case 10920, look behind Exhibit No. 2, the regional map, and then turn to the proposed location for the Huerfano Unit 509 well. Are you with me?

A. Yes, sir.

Q. When we look at Section 30, the spacing unit for the PC is proposed to be the northwest quarter?

A. That is correct.

Q. Were there any previous wells drilled for the Pictured Cliff formation?

A. No, sir, I don't believe so, in the northwest quarter.

Q. I'm looking at a dry hole symbol just to the south and west of the No. 220?

A. Yes, sir.

Q. What does that represent?

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

I believe Mr. Daves would know the answer to that question, if we could bring that up at that point in time.

Q. Okay. So as it currently now exists, there is no PC well in the northwest quarter?

A. That is correct.

Q. Do we have a PC well in any of the other quarter sections of Section 30?

A. Yes, sir, we do. You'll notice that there is a Pictured Cliffs well in the northeast quarter and the southwest quarter. I do know that, from discussion with the asset management team, that the dry hole symbol down in the southeast quarter, the old Huerfano Unit 377 well, if I remember correctly, was a Pictured Cliffs well that was plugged and abandoned.

Q. This is the one remaining case that involves nonstandard locations both in the PC as well as the Coal?

A. Yes, sir, that is true.

Q. And we're off-pattern in the Coal, are we not?

A. That's true.

Q. Turn to the next display behind what we're just looking at, and help us understand what the

basis is for seeking the unorthodox location.

A. For the Huerfano Unit Com 3509 well, we worked quite a while with the Bureau of Land Management trying to find a suitable location that would at least -- would not at least be NSL because of footage.

Let me explain this map to you and the rationale that went on in coming to the current location. You'll see on that map a series of dotted lines commencing in the northwest quarter and running almost due south. That is an existing road. You will see a green line that has a hatched pattern in segments of that line on the map, and that's an existing power line.

You will also note that I have outlined a line in red that extends basically from the northwest quarter, approximately center of the northwest quarter to the north, and that is an existing pipeline.

We have indicated the windows up in that northwest quarter that we would have preferred to use and that would have been legal locations except that the coal well still would have been off-pattern.

The two square windows located to the west, as you can see, run into interference from the

pipelines, from the power lines, and they're down in the wash. And we were unable to locate a well on those two windows because of that.

The two windows to the east are located up on the hill, the clay hills of the Badlands. They are very unstable clays and would not be good locations to build locations, and the Bureau of Land Management would not allow us to build in that area.

Q. The Lodewick #1 is off-pattern in the Coal, but it is a standard location in the PC? That's back up in Case 10919.

A. Yes, sir, that is correct.

Q. Why is the proposed location off-pattern for the Coal?

A. Because we are utilizing existing Pictured Cliffs wellbore is the primary reason for that.

Q. And the preference from the technical people was to utilize the PC well up in the northwest quarter?

A. Yes, sir, that is correct.

Q. Anything else, Mr. Alexander? Oh, yes, the locator map we have not identified by exhibit number, Mr. Examiner, but there is a map on the display board to give you a reference point, and I'm going to let Mr. Alexander explain the code so you

can see where you have processed past cases and where he's now asking you to look at these additional six wells.

A. You will notice on this area display map, it's a good portion of the San Juan Basin. The circles, the stars, and the gas well symbols that are in the dark blue are previous hearings that the examiner -- some of which the examiner has heard and approved.

You will notice over on the western portion of the map, there are seven red stars located on that map. Those are the wells that we are here to discuss today.

And we just wanted to kind of give you a reference and a feel for the proximity of these wells with regard to the commingled applications that you have heard and approved in the past.

Q. As part of the project for Meridian to look at downhole commingling of Fruitland Coal and Pictured Cliff wells, do you have future plans for additional projects like this?

A. Yes, sir, we will. We've had success in the projects to date, and we think it is a very viable alternative to capturing reserves that are otherwise going to be lost. Probably, we would like

to entertain perhaps ten projects a year. We're estimating that at this point in time.

MR. KELLAHIN: That concludes my examination of Mr. Alexander. We move the introduction of his Exhibits 1 through 4 -- I'm sorry -- 1 through 3 in each of the exhibit books.

EXAMINER STOGNER: Exhibits 1 through 3 in each of the four exhibit books will be admitted into evidence at this time.

The spreadsheet and the map that you referred to, that's just for informational purposes?

MR. KELLAHIN: Yes, sir.

EXAMINER STOGNER: And not an exhibit; is that correct?

MR. KELLAHIN: I don't think they need to be exhibits, Mr. Examiner.

EXAMINATION

BY EXAMINER STOGNER:

Q. In referring to Case 918, the #2 well, Neudecker #2 well, this is the one which you requested the east half of Section 35 to be the 320-acre proration unit and are now changing it to the 320, in looking at that map, are any of the parties or all of the parties that were contacted, are they represented here?

A. Yes, sir, that's correct. You'll notice that we basically have three leases within that section. The northeast quarter of the northeast quarter are leaseholds, and there may be more than one leasehold that Amoco owns in that quarter quarter. We're preparing the title opinions on that, and I did not bring those opinions to tell you how many leaseholds are in that quarter quarter, but the rest of the section is basically divided between two different leaseholds.

We originally oriented this well on the east half, and, of course, it involved Amoco, but as we were continuing the study of our projects, we have identified a candidate, the Zachry #2 Pictured Cliffs well located down in the southwest quarter, and you'll see it indicated as a brown gas well symbol. We have submitted that well administratively, and it has been approved by the Commission for a commingle. And so that step we have taken.

We have also gone back with Amoco, and we've been working on reorienting that wellbore, if they had no objections, and they have since agreed to reorient the wellbore so that they will be involved in a north-half dedication.

That would allow us to develop that Zachry

#2 commingle in the south half on one common leasehold, which we think is a much better approach. And we've been working towards that goal, and we believe we are now at that point if the Commission agrees that the reorientation is appropriate.

Q. I'm looking at my diagram here. You have the Zachry taken in that south half. I assume that's the Zachry lease for Meridian; is that correct?

A. Yes, sir, that's true. It includes all of the south half, and you'll notice that it goes north into the southwest of the northwest quarter also.

Q. So, if anything, you're diminishing Meridian's interest somewhat? That's the way it looks to me.

A. No, sir. Actually, the interests remain the same because Amoco is really the only other outside party, and their 40 interest, you know, it's fixed. Since it's in the northeast of the northeast, it's going to be in there one way or the other; so we wind up with that percentage of ownership between Meridian, and Amoco remains basically the same.

Q. I see Union and Conoco's name appearing in the upper portion of that section.

A. Yes, sir. We purchased leasehold in there, the Union of Texas leasehold up in there, and

Conoco did not have an interest in the Pictured Cliffs nor the Fruitland formation.

Q. Regardless, this is the first Fruitland Coal well in that section; correct?

A. That is correct, yes, sir.

Q. And it's still a standard location regardless if it's a stand-up or a lay-down?

A. Yes, sir, that's correct.

EXAMINER STOGNER: I don't see any reason to readvertise, Mr. Kellahin. That's what I was trying to get to on that.

As far as any questions of this witness, I have no others at this time.

MR. KELLAHIN: All right, sir. Thank you, Alan.

EXAMINER STOGNER: Mr. Kellahin.

MR. KELLAHIN: Call at this time Mr. Scott Daves.

SCOTT DAVES,

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

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Daves, would you please state your

name and occupation.

A. My name is Scott Daves. I'm a petroleum engineer. I'm currently employed with Meridian Oil in Farmington, New Mexico.

Q. On prior occasions have you testified as a petroleum engineer before the Division examiners, and particularly have you testified in prior downhole commingling cases with regards to two of these two pools?

A. Yes, I have.

Q. As part of your duties, have you continued to examine the opportunity to downhole commingle the Pictured Cliff with the Fruitland Coal gas, and have you identified candidates that you're seeking to have approval for that process?

A. Yes, I have.

Q. Do the wells that are before the examiner today represent wells for which you've done engineering work?

A. Yes, they do.

MR. KELLAHIN: We tender Mr. Daves as an expert petroleum engineer.

EXAMINER STOGNER: Mr. Daves is so qualified.

Q. (BY MR. KELLAHIN) Let me have you

summarize what you see to be the purpose and objective and to identify, perhaps, we'll start with the recompletions first.

A. Okay.

Q. And then we'll deal with the new drill as a separate topic.

A. Okay.

Q. But give us a quick summary of what you're trying to do.

A. Typically, if you go down the list here, what you see are Pictured Cliff wells that are 40-plus years old. They have approximately 200 psi, reservoir pressure. They're attempting to overcome line pressures that are very near reservoir pressure; so they may or may not produce on a given day. Several of the wells, the Neudecker 2, the Huerfano Unit 18 have actually been blind plated by the various gas companies.

What we're attempting to do here is upgrade the wellbore and also reach and complete new reserves and then commingle the two.

Q. Have you looked at each of the PC wells involved to see if there was anything else short of commingling that would add additional ability of those wells to produce Pictured Cliff production?

A. Yes, we have. And the opportunities to do anything with the wellbore as they currently exist are not economic.

Q. In each instance, has the well been sufficiently perforated that the entire Pictured Cliff formation has had an opportunity to add production to that well from that formation?

A. Yes, they have.

Q. When we look at the individual wells, is there any particular reason to select these Pictured Cliff wells within the section as opposed to one of the other existing PC wells?

A. Typically, we try to stay on pattern with the Fruitland Coal spacing is our first look. The other thing that we're looking at is a wellbore that we feel has the integrity to add reserves through and utilize that wellbore that way.

Q. Let's look at the one example which you couldn't find a PC well that would give you a Fruitland Coal on-pattern location. It's the Lodewick #1 well, I believe.

A. Right.

Q. If you'll turn to the exhibit book in 10919, let's find us a locator map. If you'll turn to 919 and look at the last display behind Exhibit 2,

I think this will perhaps serve the purpose. When we're looking at Section 18, what is there about Section 18 that caused you to select the well in the northwest quarter as opposed to one of the other existing PC wells?

A. It is a well that is currently operated by Meridian Oil. And if you look in the southeast quarter, there's already a plugged-back well to a Fruitland Coal well there. So our options were the southwest and the northwest, and we chose the northwest because that's the course actually we operate.

Q. Okay. For each of the recompletions, have you examined prior historical production information for the PC and determined what, in your opinion, is a forecast of future reserves for those wells?

A. Yes, I have.

Q. Where do we find that in one of these exhibit books?

A. Exhibit 6, a graphical representation. It is a rate:time curve.

Q. Will the examiner find that information in each of the exhibit books at the same point behind Exhibit 6?

A. Yes.

Q. Let's use this as an example, the Lodewick well. What does it show you?

A. What it shows on the Y axis is gas in a monthly production. What you have down in the bottom left-hand corner is the shut-in wellhead pressure versus cumulative production EUR. You have cumulative production right below that, and then you have the calculated remaining reserves right below that.

What you also show is the historical production. In the top you show the well name, the current field that it is in, the location, the county, the major product, and the reservoir. And that actual reservoir is the Pictured Cliffs there.

Q. Have you utilized past historical productions to derive at an allocation formula so that you can allocate future gas production between the PC and the Fruitland Coal gas?

A. Yes, I have.

Q. Let's turn to Exhibit 5. You've testified in prior cases, Mr. Daves, about the methodology you have recommended to the examiner for this allocation formula?

A. Yes.

Q. Is this consistent with the method used by

you in past cases and approved by the Division?

A. Yes, it is.

Q. Describe for us what you've done for this well.

A. What we have for this specific well, we are basically saying that the total production is equal to the sum of the Fruitland Coal production and the Pictured Cliffs production. We've basically rearranged the formula to solve for Fruitland coal production, which is equal to the total production minus the allocated Pictured Cliffs production.

And then below that we derive how we are determining the Pictured Cliffs production. And then, finally, how we will solve for Fruitland Coal production in an equation form. And that equation, the Dpc = .00102, that is the actual monthly decline that is shown on this decline curve in Exhibit 6.

Q. Have you used this formula for each of the, I guess it's the other five recompletions?

A. Yes, I have.

Q. Have you substituted in the formula what in your opinion is the appropriate value based upon actual decline curves for each of those wells?

A. Yes, I have.

Q. Once that's established in the formula,

then the remaining portion of the production is attributable to the Fruitland Coal gas?

A. That's correct.

Q. Let's turn now to the new drill. Let's look at exhibit book 10920. Let's deal with the unorthodox location first, and perhaps if you'll turn to Exhibit 2 and look at the second plat -- there's three plats, if you'll look at the middle plat -- describe for us why we've chosen to position this well in the northwest quarter as opposed to one of the other quarter sections.

A. The primary reason that we've proposed the well in the northwest quarter section is we are attempting to drill for the Pictured Cliff reserves that will be in that quarter section, as opposed to drilling a Fruitland Coal well in the northeast quarter section that would only be a Fruitland Coal.

Q. Is there an opportunity to recomplete an existing PC well in Section 30 and to utilize that well then as a downhole commingled well?

A. No, there is not.

Q. So you can't create the same situation as you did for the others?

A. Right.

Q. Let's turn now to the allocation portion

of the presentation with regards to your methods to derive an allocation formula on a well that has not yet been drilled. Where do we find that information?

A. That is in Exhibit 6.

Q. Is this a method that you have presented to the Division in prior cases and which has been approved by the Division?

A. Yes it has, and I have presented it.

Q. Let's look at the formula and describe for us in summary fashion what it is and how to make it work.

A. The beginning part is identical to the previous equations. Where the difference lies is we're determining as a function of reservoir pressure for the Pictured Cliffs what the actual remaining reserves are. And then from there, using the initial rate, we are calculating a decline curve for the Pictured Cliffs. And then from there we are allocating production similar to the previously presented cases.

Q. Have you utilized this method of allocation successfully with any of the wells that have already been approved by the Division?

A. Yes, we have.

Q. Is it working all right?

A. It is.

Q. It's not too cumbersome, too intricate, too involved?

A. No, no. It's fairly simple. It's a matter of programming the equations in a computer program and then entering the monthly production, and then it calculates the production from that point.

Q. Let's turn now to the question of economics. One of the criteria for downhole commingling is that one of the zones must be marginal?

A. Correct.

Q. How have you forecasted and reached an engineering conclusion that one of these two pools is going to be marginal in the Huerfano Unit Com 509?

A. What we have done is we have estimated, using offset pressures, what we feel is remaining reserves for the Pictured Cliffs. And the calculations show that there's approximately 125 million cubic feet of reserves. And that, on Exhibit, I believe, 8, on the Y axis is reserves, and on the X axis is initial rate.

You can see if you move up to the 125 million point that, even as a commingle, it is uneconomic and at any rate.

Q. Is this the same method that was approved by the Division for determining the criteria for new drill, marginal PC wells and/or Fruitland Coal?

A. Yes, it is.

Q. The values that went into the economic valuation for the curves, have they been made specific for this particular area?

A. They are a function of the various wells in that area so that I did not skew the data. I took the average costs for all of these type of wells in this specific area.

Q. And your recommendation to the examiner is to do what with this curve then?

A. To utilize it as a reference point to determine whether the Pictured Cliffs is uneconomic or not.

Q. And it will be the result of reading the graph and looking at a combination of initial rate versus the calculated estimate ultimate gas recovery?

A. That's correct.

Q. Have we yet had an opportunity to see how well that curve is working with any of the other projects that you've worked on?

A. Yes, we have.

Q. With what results?

A. What we have shown is that typical Pictured Cliff wells that we have utilized have an initial reservoir pressure of approximately 200 psi, which would give them in the neighborhood of 150 to 300 million remaining and an initial rate of about 100 Mcf a day.

Q. For those wells that have actually been tested under the formula, we have found that our judgment on the curve is correct; that those wells, in fact, are marginal to the extent that the only way we can recover the additional gas is by downhole commingling?

A. That is correct.

MR. KELLAHIN: I believe that covers your presentation, Mr. Daves.

Mr. Examiner, we would move the introduction of Mr. Daves' exhibits. They are found behind exhibit tabs 5 and 6 in Case 921, 919, and 918. He has an additional display with reference to the new drill well, and that was found behind Exhibit tab No. 8. So we move the introduction of his appropriate exhibits.

EXAMINER STOGNER: Mr. Kellahin, that was Exhibits 5 and 6 in Cases 918, 919, and 921. There's an Exhibit No. 7 in 920. Is that right?

MR. KELLAHIN: I'm sorry, I misspoke. In Case 920, he's going to have Exhibits 6, 7, and 8.

EXAMINER STOGNER: Exhibits 6, 7, and 8 in Case 920 will be accepted at this time.

MR. KELLAHIN: That concludes my presentation of Mr. Daves.

EXAMINATION

BY EXAMINER STOGNER:

Q. My memory doesn't serve me. The past cases that we've talked about this morning, how many of those were recompletions, and how many of those were new drill, or percentage, if you remember?

A. About 30 percent were recompletions, and about 70 percent were new drills.

Q. So the difference today is you only have one new drill and the rest are recompletions?

A. That is correct.

Q. Exhibit No. 8 in Case 10920, that curve, is that the same curve that was utilized in the others, or is there a difference in each one?

A. They are the same, and the reason for that is I prefer to use an average cost in each of the general areas.

Q. So this curve is still applicable -- or that curve utilized in those cases is still

applicable in this matter?

A. Yes, sir.

Q. And looking at Exhibit No. 6 in Case 920, let's look at the first page. There are some constants, in this particular instance. The constant comes down, I believe, where we're talking about the estimated ultimate recovery for the Pictured Cliffs. And under that formula, there is a 0.62. Is that a constant that has changed throughout, or is that one that remains consistent?

A. That's a constant that is a function of that spacing unit for the Pictured Cliffs, specifically for that spacing unit.

Q. So it was different in the other cases?

A. Yes, sir.

Q. If I remember right, that was a point of considerable discussion in the other cases; right?

A. That's correct.

EXAMINER STOGNER: Mr. Kellahin, I don't have any other questions.

MR. KELLAHIN: Okay.

EXAMINER STOGNER: Of this witness.

MR. KELLAHIN: The last witness is a geologist, Mr. Jay Close.

EXAMINER STOGNER: I'm sorry, what was his

last name?

MR. KELLAHIN: C-L-O-S-E, Close.

JAY CLOSE,

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

EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name and occupation.

A. My name is Jay Close, and I work as a petroleum geologist for Meridian Oil Inc. in Farmington, New Mexico.

Q. Mr. Close, on prior occasions have you testified before the Division as a geologist?

A. No, sir, I have not.

Q. Summarize for us your education.

A. I received a bachelor's in geology from Wittenberg University in Springfield, Ohio, in the summer of '83, a master's in geology from Miami University in Ohio in the summer of 1985, and a doctorate in geology from Southern Illinois University in October of 1988.

Q. Summarize for us what particular work you have performed in this area where we're concerned

about the Pictured Cliff and the Fruitland Coal gas.

A. I've been involved in detailed evaluation of subsurface geophysical log information to get an idea as to the depths, geometries, and log for reservoir properties for both the Coal and the Pictured Cliffs formation.

MR. KELLAHIN: We tender Mr. Close as an expert petroleum geologist.

EXAMINER STOGNER: Dr. Close is so qualified. I'm assuming that's your title?

THE WITNESS: Yes, sir.

Q. (BY MR. KELLAHIN) Let's find the geologic displays, and I'll leave it to you to find an exhibit book that illustrates the geology. We have been using 918. Does that work?

A. That would be quite fine.

Q. Let's turn to the information behind Exhibit tab No. 4. I misspoke. I thought there was a pull-out here somewhere. No, I'm right, Exhibit 4. What are we looking at in each of the exhibit books when we turn to the geologic information?

A. You are looking at a type log for each of the subject wells. You are looking at the depths with respect to the rock types. The Pictured Cliffs formation and the Fruitland formation are labeled

with respect to depth, and the Coal is also specifically marked with respect to each of those type logs for each well.

Q. As to the recompletions, we're dealing with existing PC wells, do you see, as a geologist, any additional opportunity in those PC wells to add PC reserves other than what currently exists?

A. No, sir.

Q. The opportunity for the Fruitland Coal for each of the recompletions, is this the best method and the location within each section to add the Fruitland Coal to these wells?

A. Yes, it is.

Q. Geologically, what's your sense of the project? Why are we doing this from a geologic point of view?

A. You are trying to access reserves that otherwise would not be able to be produced economically out of the Fruitland Coal formation.

Q. Are we located at the point in Pictured Cliff depletion that these particular sections alone are not going to support additional PC wells?

A. Yes, sir, we are.

Q. So we need to find a way to prolong the life of the existing PC wells?

A. That is correct.

Q. The opportunity to do that is best achieved by adding the Fruitland Coal gas?

A. That is correct.

Q. Let's turn now to the geology with regards to the new drill, slightly different concern and questions there. Let's look at 920, exhibit tab 4. We've got a Fruitland Coal isopach or at least a portion of one. Are you with me?

A. Yes, sir.

Q. Describe for us what this shows you insofar as the specifics of Section 27 are concerned.

A. Don't you mean Section 30?

Q. I'm sorry, it's Township 27, Section 30.

A. You are looking at a map of the Coal that can be identified throughout the entire Fruitland formation and we have so plotted that data with respect to location on this map, which is reproduced from a regional map of the Fruitland Coal play in this area of the San Juan Basin.

Q. Is there sufficient coal thickness, in your opinion, to cause a well to be drilled as a recompletion in the northwest quarter of that section?

A. Yes, sir, there are.

Q. We have coal present there, and therefore I believe it to contain gas that might be produced in this fashion?

A. That is correct.

Q. Describe for us geologically why Meridian has chosen the northwest quarter of Section 30 as opposed to one of the other quarter sections.

A. One of the key reasons is such that you have the subsurface control in which the coal can be identified with respect to depth and thickness.

For example, as is shown in the type log behind Exhibit 5, the second page, one can identify two main benches of coal in the Fruitland formation above the top of the Pictured Cliff sandstone.

Q. As a geologist, do you concur with the ultimate conclusion that in each of these instances, the best opportunity to recover additional gas that might not otherwise be produced is the approval of these particular projects?

A. Yes, sir, I do.

MR. KELLAHIN: That concludes my examination of Mr. Close for exhibit book 918, 919, and 921. His exhibits are found behind tab No. 4 in exhibit book 920, his exhibits are found behind 4 and

5. We move the introduction of those exhibits.

EXAMINER STOGNER: All the previously mentioned exhibits will be admitted into evidence at this time.

EXAMINATION

BY EXAMINER STOGNER:

Q. In referring to or looking at Exhibit No. 4 in Case 920, I'm looking at the first map. I want to make sure I get this straight, the location up there in the northwest quarter, and it looks like it is at the edge of a small pond that is up in the upper section to the north.

Do you want to kind of help me through with what I'm looking at here? Is that additional coal? Is it thicker coal or more permeable coal?

A. You're looking only at coal thickness here. And the data you see there within that pod, that circle, so to speak, the coal thickness is believed to increase as a function of log interpretation. So, therefore, that's why you see a bull's eye of increasing coal thickness with respect to that location.

Q. So that's a factor in this location?

A. Yes, such that we have the subsurface control to believe that we do have additional coal

thickness, that is correct.

Q. Is there a coal gas well in that upper section to the north?

A. I do not recall. I would have to look.

Q. I can do that. I just --

A. No, there is not.

Q. But you use a log interpretation from the deeper Pictured Cliff wells, are utilized to come up with that thickness; is that correct?

A. That is correct. There is a coal well in the northeast portion of the section just to the north there, but that is correct. Typically, the electric logs will be measured over the shallower formations, such as the Fruitland and Pictured Cliffs, and those are where the data came or were obtained from.

Q. On the recompletions, I'm assuming that the coal in each instance has casing behind it at this point?

A. That's correct.

Q. And will just the coal seams or are they indicated in your different exhibits, is that where the perforations are to be located?

A. That is correct.

Q. So as far as the Fruitland sand intervals

that lie in between, if that be the adequate description of the matrix between the coals, will that be left unperforated, or will those be explored also?

A. In these particular cases, the Fruitland sand is not of interest. It is not believed to be, based upon log interpretation, productive in this area and will not be perforated. In many cases, it is not even present within the coal packages of interest in these wells.

Q. I'll ask this question to you, and if it's not your area, we can defer it to the engineer. Will the Fruitland Coal intervals or perforations, will they be treated in any way for stimulation?

A. They may -- in terms of some type of fluid that may be used to break down the perforations?

Q. Yes. Fractures, or whatever the case may be?.

A. Acid may be used to break down the perforations, yes.

EXAMINER STOGNER: With that, Mr. Kellahin, I have no other questions at this time.

MR. KELLAHIN: That concludes our presentation, Mr. Examiner.

EXAMINER STOGNER: Do you have anything

further in this matter or these matters?

MR. KELLAHIN: No, sir.

EXAMINER STOGNER: Does anyone else have anything further in these four cases? With that, I'll take Case Nos. 10918 through 10921 under advisement at this time, and we'll recess until 1:20.

CERTIFICATE OF REPORTER

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

I, Deborah O'Bine, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that I caused my notes to be transcribed under my personal supervision, and that the foregoing transcript is a true and accurate record of the proceedings of said hearing.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL, February 28, 1994.

Deborah O'Bine

DEBORAH O'BINE
CCR No. 63

OFFICIAL SEAL
Deborah O'Bine
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: Sept. 19, 1994

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case Nos. 10918, 10919, 10920, 10921 heard by me on 17 February 1994.

Examiner
Oil Conservation Division

CUMBRE COURT REPORTING
P.O. Box 9262
Santa Fe, New Mexico 85704-9262
(505) 984-2244 FAX: 984-2092