NEW MEXICO OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

CASE NO. 10519

IN THE MATTER OF:

The Application of Yates Petroleum Corporation for an unorthodox location, Eddy County, New Mexico.

BEFORE:

DAVID R. CATANACH

Hearing Examiner

State Land Office Building

August 20, 1992

REPORTED BY:

DEBBIE VESTAL
Certified Shorthand Reporter
for the State of New Mexico

ORIGINAL

A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

ROBERT G. STOVALL, ESQ.
General Counsel
State Land Office Building
Santa Fe, New Mexico 87504

FOR THE APPLICANT:

LOSEE, CARSON, HAAS & CARROLL, P.A.
Post Office Drawer 239
Artesia, New Mexico 88211-0239
BY: **ERNEST L. CARROLL, ESQ.**

FOR CONOCO, INC.:

KELLAHIN & KELLAHIN
Post Office Box 2265
Santa Fe, New Mexico 87504-2265
BY: **W. THOMAS KELLAHIN, ESQ.**

I N D E X

E X H I B I T S

YATES EXHIBITS:	PAGE		Page Identified PAGE
Exhibit No. 1	7	Exhibit No. 2	11
Exhibit No. 3	12	Exhibit No. 4	12
Exhibit No. 5	46	Exhibit No. 6	46
Exhibit No. 7	46	Exhibit No. 8	46
Exhibit No. 9	17	Exhibit No. 10	17
Exhibit No. 11	17	Exhibit No. 12	17
Exhibit No. 13	17		

CONOCO EXHIBITS:	PAGE		PAGE
Exhibit No. 1	69	Exhibit No. 2	70
Exhibit No. 3	76	Exhibit No. 4	98
Exhibit No. 5	79	Exhibit No. 6	98
Exhibit No. 7	99	Exhibit No. 8	100
Exhibit No. 9	101	Exhibit No. 10	106

EXAMINER CATANACH: At this time we'll call Case 10519.

MR. STOVALL: Application of Yates Petroleum Corporation for an unorthodox location, Eddy County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. CARROLL: Yes, Mr. Examiner. I'm Ernest Carroll of the Artesia law firm of Losee, Carson, Haas & Carroll, and I'm here today representing the applicant, Yates Petroleum Corporation. And I will have three witnesses.

EXAMINER CATANACH: Are there other appearances?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin & Kellahin appearing on behalf of Conoco, Inc. And I have two witnesses.

EXAMINER CATANACH: Any other appearances?

Will the five witnesses, please, stand and be sworn in.

[The witnesses were duly sworn.]

MR. CARROLL: May I proceed?

EXAMINER CATANACH: You may.

MIKE BURCH

Having been duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARROLL:

Q. Would you, please, state your name, sir, for the record and what your occupation is and by whom you're employed?

A. My name is Mike Burch. I'm a landman for Yates Petroleum Corporation, Artesia, New Mexico.

Q. Mr. Burch, are you familiar with the application that is being heard at the present time that was filed by Yates Petroleum Corporation and is known as Case No. 10519?

A. Yes, I am.

Q. Mr. Burch, have you had an occasion to testify before the New Mexico Oil Conservation Division as a petroleum landman?

A. Yes, I have.

Q. Have you had your credentials in the field of petroleum land management accepted by the Division?

A. Yes, I have.

MR. CARROLL: I would tender Mr. Burch

as an expert in the field of petroleum land management.

EXAMINER CATANACH: Mr. Burch is so qualified.

Q. (BY MR. CARROLL) Mr. Burch, would you for the record briefly summarize what Yates' application is for today?

A. Yes. In the case before the Commission, Yates Petroleum seeks approval of an unorthodox location 360 feet from the south line and 2080 feet from the west line of Section 34, Township 20 South, Range 24 East, in Eddy County, New Mexico, in the undesignated South Dagger Draw-Upper Pennsylvania Pool with the west half of said Section 34 to be dedicated to a well forming a standard 320-acre spacing and proration unit for either oil or gas.

Q. Mr. Burch, have you prepared certain exhibits today to aid in the presentation of this case?

A. That's correct.

Q. Would you turn to your first exhibit, Exhibit 1, and would you, please, identify that exhibit for the record and then once it's identified, please describe its pertinence to

this case.

A. Exhibit 1 is a plat with yellow highlighted acreage that Yates Petroleum Corporation owns. Also, as you'll note in the west half of Section 34, solid yellow block outlined in red with our proposed location as the Diamond AKI Federal No. 1 location.

Also outlines in Section 35 a highlighted area where Yates Petroleum Corporation operates a well that owns approximately -- that well is the Mojave AJY No. 1. Yates Petroleum operates that well along with a partner, Conoco as a partner.

Q. Then, Mr. Burch, all of the acreage that is colored in solid yellow, that belonged 100 percent to Yates Petroleum; is that correct?

A. That's correct.

Q. There are two or three tracts which are outlined in yellow. Those tracts are at least some percentage of ownership held by Yates, and they are the operator of those tracts; is that correct?

A. That is correct.

Q. And then you were just describing down in Section 35, we do have -- or Yates Petroleum

does have a producing well in the same formation, the Diamond AKI or L is targeted to go to; is that correct?

A. That's correct.

Q. Now, the red -- the yellow line or yellow block in the west half of Section 34 that is outlined in red, is that the proration unit with which we are concerned and is the subject of this particular application?

A. That's correct.

Q. Now, down in the southeast corner of that, there are actually two dots drawn. There is in black an AK location, and it has a small red line through it. Is that the actual location that we are seeking to drill the well at the present time?

A. No. That was our initial proposed location at a legal location of 660 from the south line and 1980 from the west line.

Q. So the actual location that we are seeking to drill this particular well today is the red dot that is even closer then to the southeast corner of that west half of Section 34?

A. Yes. That red dot is representative of the location that we seek to drill at the

location 360 feet from the south line and 2080 feet from the west line.

Q. Could you explain why Yates Petroleum proposes or has had to move its location from the orthodox location shown on this map to the unorthodox location shown on Exhibit 1?

A. As I earlier stated we originally sought this as a legal location and sought application with the BLM through our APD application. We were turned down by the BLM because initially this proposed location fell within a 100-year floodplain of the Box Canyon.

And they felt like with it being in the 100-year floodplain of the Box Canyon and also the amount of cut and fill that would be required to build location they couldn't approve our original location request.

Q. Was there something else also discovered at the time the location was being examined by the federal authorities?

A. Well, as we started to apply for approval of this location, there was also an archeology inspection, and it was found to be an archeological site on this original proposed location.

Q. Exhibit 2 that has been prepared by Yates Petroleum, could you describe what that is and the relationship to the testimony you've just given us?

A. Yes. Exhibit 2 is a letter from the BLM, Mr. Rick Manus, outlining our attempts to get our legal location as we first applied for. We received notice there was on-site inspection by our regulatory man, Mr. Ken Beardemphl. That is who this letter is dated and addressed to.

And the BLM man, Barry Hunt, that is the letter that was sent to us, indicating that our original proposed location was in the Box Canyon 100-year floodplain and also asking them or requesting us to move our location to get out of the floodplain.

Q. All right. So this June 12 of 1992 letter actually documents the problems that you've just described in your earlier testimony?

A. That's right.

Q. Since the location was then moved by Yates Petroleum and that application was made to the BLM for approval of the unorthodox location, which is the subject of our application today?

A. That's correct.

Q. And has that application for permit to drill been granted?

A. It has.

Q. I ask you to turn to Exhibit 3, and would you, please, describe what Exhibit 3 is?

A. Exhibit 3 is our application to drill filed with the BLM, approved by the BLM on 8/11 of 92 by Mr. Manus, for our new location at the 360 south and 2080 from the west line.

Q. This is actually a copy of the approved APD?

A. That's correct.

Q. For the Diamond AKI No. 1 well?

A. That's correct.

Q. I ask you to turn to Exhibit No. 4. Could you describe what that is?

A. Exhibit No. 4 a certificate of mailing in compliance with Rule 1207. It was prepared by your law firm making notification of the required -- to the offset operators for this unorthodox location.

Q. And the only operator offsetting that the rules would require us to give notice to was Conoco; is that correct?

A. That's correct.

Q. And in fact that's by virtue of the fact that they operate the east half of Section 34 and also the northwest quarter of that nonstandard Section 35, which is just to the south of our acreage?

A. No. They don't operate the nonstandard section to the south in 35.

Q. All right.

A. Yates Petroleum does. They operate the nonstandard Section 34 --

Q. Okay.

A. -- to the south.

Q. All right. And all of the acreage then in the nonstandard 35 is owned in conjunction with Conoco, and Yates is the operator?

A. That's correct.

MR. CARROLL: Mr. Examiner, I would move --

Q. Well, first of all, let me ask the question. Were the Exhibits 1 through 4, which you've just testified to, Mr. Burch, prepared by yourself or under your guidance and direction?

A. They were.

MR. CARROLL: Mr. Examiner, I would move admission of Yates Petroleum Exhibits 1

through 4 at this time.

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

MR. CARROLL: I would pass the witness.

EXAMINER CATANACH: Mr. Kellahin.

MR. KELLAHIN: Thank you, Mr. Examiner

EXAMINATION

BY MR. KELLAHIN:

Q. The federal lease in the west half of Section 34, is that lease held by production by a well anywhere within that leased acreage?

A. No, not within that leased acreage.

Q. What is the soonest you must drill a well in the west half of 34 to avoid having that lease expire?

A. Well, it not being held on that proration unit, I would say that it wouldn't need to be drilled immediately.

Q. I'm trying to understand your timing. Is there an obligation on you to drill a well within --

A. Not to my knowledge there is not. No.

Q. So within the period of time to process this application, you don't have an expiring lease that you have to deal with?

A. Not to my knowledge. Nc, sir, I don't.

Q. When we look in the spacing unit in 35 for the Mojave No. 1 well, you share that working interest with Conoco?

A. That's correct.

Q. Do you recall the percentage split between the two companies?

A. It's approximately 56 percent Conoco, 44 percent Yates.

Q. And then the east offset, that's 100 percent Conoco, and if you look at the adjoining nonstandard section in the township to the south, which is in 34, that's 100 percent Conoco?

A. Yes, sir.

MR. KELLAHIN: No further questions.

EXAMINER CATANACH: Just one, Mr. Burch.

EXAMINATION

BY EXAMINER CATANACH:

Q. After your initially staked location, was there any consideration given to moving north, or is that due to geologic reasons that you moved it south?

A. Well, after our consultation with geology, it was recommended that it be moved to

where it was.

Q. Okay.

A. That's when we made application for that location.

Q. Okay.

MR. CARROLL: Our geological witness will specifically address that, Mr. Examiner.

EXAMINER CATANACH: Okay. Nothing further. The witness may be excused.

MR. CARROLL: We call D'Nese Fly next.

D'NESE FLY

Having been duly sworn upon her oath, was examined and testified as follows:

EXAMINATION

BY MR. CARROLL:

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

A. My name is D'Nese Fly. I'm a geologist with Yates Petroleum in Artesia, New Mexico.

Q. Are you familiar with the application that is presently being heard by the Examiner known as Case No. 10519?

A. Yes, sir.

Q. And in fact you are the person who actually performed the geological work for Yates

Petroleum with respect to that application?

A. Yes.

Q. Ms. Fly, have you had an occasion to testify previously before the New Mexico Oil Conservation Division in the field or with respect to the field of petroleum geology?

A. Yes, I have.

Q. And have you had your credentials accepted as an expert in that field?

A. Yes.

MR. CARROLL: Mr. Examiner, I would tender Ms. Fly at this time as an expert in the field of petroleum geology.

EXAMINER CATANACH: Ms. Fly is so qualified.

Q. (BY MR. CARROLL) Ms. Fly, you have prepared certain exhibits to aid in your testimony today, have you not?

A. Yes, I have.

Q. The first exhibit that you prepared was Exhibit No. 9, was it not?

A. Yes. That's just kind of a write-up I did of my testimony.

Q. It's basically a summary of the evidence that will come from your next exhibits,

10 through 13; is that correct?

A. Right.

MR. CARROLL: Mr. Examiner, I was out of the office most of the last week or so, and we have in her workup, there are references to Exhibit A, B, C, and D. Those are synonymous in the same sequential order as they are written here with 10 through 13 for your reference. So Exhibit A is Exhibit 10, Exhibit B is Exhibit 11, and so on.

I apologize for that. It was too late when I caught that last night.

Q. If you would, Ms. Fly, first of all, we have already heard from Mr. Burch, who gave us the problem that occurred when this well was initially staked and approval was sought from the BLM.

Would you, please, give the Examiner the benefit of your knowledge of that situation and furthermore address yourself to the question that the Examiner had a moment ago as to was thought given to moving the location in some other direction other than in the southeast direction which has been chosen?

A. Yes. If you will turn to Exhibit 13,

that will help explain this. This is a USGS topographical map, 7-1/2 minute, with the surface topography contoured on it. And I've superimposed the subsurface isopach contours of the Canyon dolomite reservoir.

I've put two locations down here: One is the orthodox; one is the unorthodox for our proposed location. And, as you can see, we could not move to the north with the 100-year floodplain, and we could not move to the west because of the archeological site and also the floodplain.

Q. So basically the location that you chose was the only direction that you could go in with respect to the problems posed by the BLM?

A. That is correct.

Q. All right. Why don't you start then through your exhibits, beginning with Exhibit 10, and give a presentation with respect to the geological aspects of this location.

A. Okay. Exhibit No. 10 is an isopach of the Canyon dolomite reservoir. And the contour interval on this is 50 feet. I have the original proposed location as a small red circle along with the new, I guess, proposed location at 2080

from the west and 360 from the south. There's a cross-section symbol on here running A-to-A prime.

This map basically shows us that in the northwest quarter of our proration unit we have the dolomite pinching out, and even in our southwest quarter, there's a high risk that this could also be feathering out towards the pinch-out, stratigraphic pinch-out.

This map is rather optimistic. And, as you can see, the well there in Unit G that is a dry hole had zero dolomite, and the well in Unit J has 300 feet. The contours are very tight there, and that gradient could be carried on across.

Since this reservoir is more of a diagenetic than depositional, it's hard to contour the exact boundary without well control. And this will be the farthest step-out from our proven location to the east other than the well down here in Section 34 of 20-1/2, 23.

Q. In looking at this map, are you indicating by the zero line here of dolomite that none of the rest of the acreage is capable of producing gas, or do you mean -- or are you

trying to portray to the Commission the fact that the best wells in this area seem to have a certain amount of dolomite within the producing interval? Could you deal with that and explain.

A. As seen in the dolomite reservoir in the Dagger Draw Field, if you have the dolomite, you have the reservoir, although sometimes the upper limes do carry gas in them. We do not choose to open those up in the field to the north in the Dagger Draw Pool, but they do sometimes show characteristics on the mud logs as having gas or hydrocarbons, I should say.

Q. The best wells have been associated with having somewhere in the neighborhood of 1- to 200 feet of dolomite, is that correct, in this particular field?

A. Well, that's correct, yeah. I guess you could say that.

Q. This zero line of dolomite, you're not intending to portray that as a zero line or a boundary of the gas-bearing strata in this particular area, are you, Ms. Fly?

A. No. No. I'm saying that the thicker the dolomite, the better the chances you have of making a well with better porosity. As you tend

to get towards the edge, since it is the diagenetic, the dolomite tends to develop stringers and finger into the Canyon lime. And therefore the porosity does not usually develop, and these tend to be tight and not as productive.

Q. Are there any other points that you would like to make or bring to the attention of the Examiner with respect to your Exhibit No. 10?

A. I think what I see from interpreting this map is that Unit N in Section 34 is the only logical location to drill when stepping out away from the proven reservoir to the east.

Q. Anything else, Ms. Fly?

A. That's about it.

Q. All right. Would you turn to Exhibit No. 11 and describe for the record what it is and then if you would discuss its pertinence to this case.

A. Okay. This is the structure map on the top of the Canyon dolomite. And, as you can see here, structure is not significantly important in this local area. We will be about flat with some of the proven gas wells to the east.

And, as I've stated earlier, this location has to do more with the stratigraphic

aspect of the dolomite than the structure.

Q. Anything else with respect to your Exhibit No. 11, Ms. Fly?

A. No.

Q. All right. If you'd turn to your Exhibit No. 12, would you, please, describe for the record what it is?

A. This is the cross-section which you see on the structure map and the isopach map running A-to-A prime. I just -- I drafted this up just to show --

MR. KELLAHIN: Excuse me just a second so I don't rattle over your testimony here.

A. All right. To show how rapidly the dolomite reservoir can fall off, the well on the left is Preston Federal No. 2, which encountered no dolomite. And the well on the right is the Mojave No. 1, which encountered approximately 300 feet of netted dolomite.

Q. (BY MR. CARROLL) Could you for the record describe the orientation where those wells are you're running from A-to-A prime so the record will be clear with the orientation?

A. From the northwest of Section 35 -- excuse me, 34 through our proposed location in 34

over to the southeast in Section 35 of 20-1/2, 23.

Q. All right. If you could then continued on with your testimony, please.

A. All I was trying to show here was we go in this small area, from zero dolomite to approximately 300 feet of dolomite. And what I'm expecting to happen is that we will encounter about 260 feet of the main dolomite body and not the feathered edge as I drew over here pinching out into the tight seely limestones.

Q. Are there any other points that you would like to make with respect to your Exhibit No. 12, Ms. Fly?

A. No.

Q. All right. With respect to the overall responsibility of the Oil Conservation Division, in your expert opinion do you believe that the granting of this application that has been made by Yates Petroleum, would such granting be in compliance with the requirements that the Oil Conservation Division prevent waste and protect correlative rights?

A. Well, yes, I mean we're here. We know it is unorthodox, and we're here to submit for

that location. But also this is more of a step-out well, and in some respects you could consider it as evaluating the offsetting acreage.

Q. With respect to that, the acreage that we've talked about, the east half of Section 24 owned 100 percent by Conoco, do you feel if this well is successful that it would in fact help evaluate and make less risky the drilling of a well on the east half of Section 34?

A. Yes.

Q. With respect to the Section 34 that is in -- it's the unorthodox Section 34 -- in Township 20-1/2, Range 23, do you also feel that a successful well drilled by Yates would also help prove up and be to the benefit of the operator in that particular section?

A. You mean operated by Conoco?

Q. If our, the Yates well were drilled and proven to be prospective that it would be of a benefit to Conoco?

A. Yes. Yes, it would evaluate all of that acreage. When you get near the zero limit of dolomite, you never know exactly where that is until the wells have been drilled and evaluated.

Q. Exhibits 9 through 13, those exhibits were prepared by you or under your direction, were they not?

A. Yes.

MR. CARROLL: Mr. Examiner, at this time I would move admission of Exhibits 9 through 13.

MR. STOVALL: Was it 10 through 13?

EXAMINER CATANACH: He's got 9 --

MR. CARROLL: The topographical map, we took it out of order. I'm sorry.

EXAMINER CATANACH: Exhibits 9 through 13 will be admitted as evidence.

MR. CARROLL: Pass the witness at this time.

EXAMINER CATANACH: Mr. Kellahin.

EXAMINATION

BY MR. KELLAHIN:

Q. Ms. Fly, let help understand your position with regards to the use of this well to help further develop and define the reservoir for additional wells. If I look at Exhibit No. 1, which is the plat of acreage that shows Yates' acreage position --

A. Yes.

Q. -- am I correct in understanding that if this well is successful, the party that benefits from this effort is going to be Yates because it helps prove up the potential for your acreage in Sections 33 and in 27?

A. No.

Q. Okay.

A. No, I don't --

Q. Who else is going to benefit by this well?

A. The locations that sit to the east, to the south, and possibly to the west of this.

Q. Well, all those locations are drilled.

A. Possibly --

Q. We've got gas wells on them.

A. They're on allowable spacing units of 320.

Q. And gas wells in this pool --

A. In the South Dagger Draw Pool.

Q. You can only have one gas well in a 320-spacing for this pool.

A. Aren't they based on allowables versus --

Q. No, ma'am. It's a non-prorated gas pool so you only get one gas well for a spacing

unit.

A. I thought it was considered as part of the North and South Dagger Draw Pools, which are based on allowables.

Q. Well, if that's your understanding, we can look at the rule.

A. Okay.

Q. Your point of view is you thought you could provide an opportunity to prove up Conoco's acreage?

A. That is correct.

Q. What has been accomplished with those gas wells on Conoco's spacing units?

A. Well, they don't reach the allowables that are allowed by the North and South Dagger Draw Associated Pool rules.

Q. What is your recollection of the highest allowable any of these gas wells have achieved?

A. I don't know. I feel like probably our engineering witness, who works more with the accumulations and reservoir analyses, could probably answer that question better.

Q. When you look at the dolomite in the South Dagger Draw, if you are out of this

dolomite development, then you're out of the gas production in the pool, aren't you?

A. The way that I mapped the Dagger Draw Field is if you have dolomite, you have a reservoir.

Q. Okay.

A. Sometimes there are gas kicks in the lime stringers above the dolomite that possibly did not get dolomitized. And from time to time those have been opened up in the Dagger Draw Pool in gas.

Q. For Yates and Conoco and anyone looking for Dagger Draw gas, those little pockets of incidental gas in the limestone are not going to be significant to those operators, are they?

A. We have never made any that are significant, but I can't say that for sure that none of them will ever be significant.

Q. The location of the zero line for the dolomite, as we run north to south through the western edge of the reservoir, as you've mapped it --

A. Yes.

Q. -- have you looked at other cases and preparations made on behalf of your company in

which a similar line was displayed for other cases?

A. Where we have mapped the zero dolomite?

Q. Yes.

A. Yes. And a lot of times we have been expecting more dolomite than what was mapped, and the zero line has creeped in, or however you want to call it, closer than we anticipated.

Q. That's why you characterized this map as an optimistic map?

A. That's right. We tend to map -- in the company where I work, we tend to map more optimistically for leasing purposes and for our own benefit.

Q. The location of the zero line, as it moves through Section 34, is that consistent with the way Mr. Beck has mapped it and other geologists in presentations to the Commission --

A. That's right.

Q. -- with regards to this pool?

A. Yes.

Q. This has matched every other one, hasn't it?

A. That's right. I didn't feel like I

needed to change my data to say it's pessimistic and risky for this location. We always map optimistically.

Q. Have you determined how many acres in the west half of Section 34 are located above the zero line in the dolomite?

A. I think the engineer witness has worked more on that and he can explain it better.

Q. Okay. The map, Exhibit 11, shows that in this area of the pool every well that has been drilled has been a gas well.

A. That is correct.

Q. Do you have a geologic explanation to the location of the gas wells in this portion of the reservoir as apart from the oil wells that are located up in Section 26?

A. Do I have a reason explaining that?

Q. Yes. Is there a geologic explanation for the fact that the oil wells appear to be up in 26 and 23 --

A. Yes.

Q. -- but we move down into this area where you're seeking a new well location, and everything around it is a gas well?

A. That's right. We don't exactly know

where to define the oil-gas boundary. We are slowly defining it as we move down Section 26 and 20, 24. But, as you move south towards Indian Basin, you're going up in structure and you're getting out of your oil leg and into just more of the gas cap.

Q. Okay. Is there any question in your mind that your proposed location is going to be in anything other than a gas well?

A. I feel like it will be a gas well. It may make some condensate. There was a strange test on the well in unit -- what would that be -- H, I -- J, I guess, the 1980-1980 from the south and east of Section 34.

Q. The Smith No. 1?

A. Yes, that's it, Smith No. 1. The DSTs stated that they got oil, a gravity of 44, and that would be considered not condensate. The condensate tends to be more around 55 or so.

Q. Uh-huh.

A. Mr. McWhorter may be able to answer those questions in a little more detail. But that was an older well, and personally I feel like they encountered possibly a pocket of oil that did not migrate on or got migrated to that

point and somehow got trapped.

Q. Does that fact cause you to change your ultimate conclusion that it is most probable that your location is going to result in a gas well?

A. I would consider it a gas well with condensate. Most of these wells make condensate along with them.

Q. You talked about feathering --

A. Yes.

Q. -- feathering of the dolomite into the limestone as we look at the western edge of the reservoir, and you've described that on your cross-section. And this feathering between the proposed location and the Preston 2, does that illustrate what you mean by feathering?

A. Yes.

Q. Does that feathering change if you had put in the Smith No. 1 well?

A. In the cross-section?

Q. In the cross-section.

A. No. That well -- let me see. That well had about 300 feet of dolomite. So, as you can see, the feathering would even be more rapid. We went from 300 down to zero within a quarter mile of each other.

Q. So the transition between the dolomite and the limestone becomes more abrupt as you compare the Preston 2 with the Smith 1?

A. Right. Therefore it makes the locations, other than Unit N in our west proration unit, very risky. I would consider this location "N" as even being risky, geologically speaking.

Q. What's the risk?

A. That the dolomite possibly could not even be there. There's no wells around this other than the dry hole that had 300 feet, and that was going towards the dolomite thickness to the east. We're moving to the west towards the edge of the dolomite, and there's a possibility that we may not encounter this.

This was seen up in the northern part of the field with the Roy 3 versus the Roy 2 where we were expecting 150 feet of dolomite and got maybe a net dolomite of 10 feet at the most. They were just very small stringers, 2- to 3-foot stringers. You know, it can drop off abruptly since it is a chemical process instead of a depositional process.

Q. Is there a certain minimum thickness to

the dolomite as you map it that's necessary in order to be a viable prospect?

A. I think maybe we have made some production on up the field, 50 to 80 feet. Some of those gas wells up in the -- a little bit north of this, the Algerita, I think, may be one, the Judith, that were out towards the edge of the dolomite. And I think they have made some, made gas out of 50 to 80 feet, something like that. Less than 50 we have had very poor luck with.

Q. In other areas of the pool, we've talked in past cases about the water in the reservoir. Do we have a water issue to address in this portion of the pool?

A. It's still present. I didn't put it on this map. I don't feel it's that crucial to this individual location here. It's going to be, as best as I can map it, at a subsea of about minus 3800, give or take 25, 30 feet, 50 feet.

I mean, we never really know exactly where the water is going to be until we get the well. We can only best estimate it. But I'm assuming that we'll have between 50 and 80 feet of hydrocarbon-bearing column here.

MR. KELLAHIN: Okay. Thank you, Mr.

Examiner. I have nothing else.

MR. CARROLL: Mr. Examiner, I have one or two questions. I could ask them now or after you're --

EXAMINER CATANACH: Go ahead, Mr. Carroll.

FURTHER EXAMINATION

BY MR. CARROLL:

Q. Ms. Fly, let's turn back to the exhibit that's No. 1. You should have a copy of it.

A. Yes.

Q. When you look at the substandard -- nonstandard, excuse me, Section 34, Mr. Kellahin, when he was talking about it, he made reference to the fact that there was a gas well in that nonstandard section. And that is true; is that correct?

A. Yes.

Q. When was that well drilled?

A. I'm not exactly sure of the drilling date. The completion date I have on it is 1983.

Q. How much gas has that well produced since 1983?

A. I think it's made around 400 Mcf, and it's shut-in.

Q. So that one well in its entire existence has made about one day's worth of gas production that you would normally expect out of a good Dagger Draw well; is that correct, or roughly that?

A. Roughly. I don't know how long it was opened. I don't have any information about that well other than that.

Q. But you would not -- or at least you would agree with me that that is not a good gas well for economic purposes, at least in the standards that Yates Petroleum uses?

A. That's correct.

Q. And in fact when you made reference to the drilling of the well at our unorthodox location, that you thought it would prove up that acreage in that Section 34, you were making reference to the fact, were you not, that in your mind that there is not an economic gas well on that section?

A. That is correct.

Q. And is it possible then that there may be an economic or another gas well location on that section that might be proved up by the drilling of the Diamond AKI No. 1 well?

A. Well, they could drill there a 660-660 from the north and east if they plugged this gas well. If you can only have one producible well, which we're still in question about, its own allowables, they could easily drill another location there if ours evaluates it to be economic.

Q. So again your position is still the same, that the drilling of this unorthodox well could in fact help evaluate the acreage in that Section 34; is that correct?

A. Correct.

Q. All right. Now, as to the west half -- excuse me, east half of Section 34, the one -- the Section 34 in 20 South, 24 East where Yates is making this application, is there a producing gas well in the east half of that section?

A. In the east half of Section 34?

Q. Yes.

A. No.

Q. Would the drilling of this well, the Diamond AKI, if it were successful possibly prove up a location in the east half of Section 34?

A. Yes.

Q. And in fact that was what you were

talking about a moment ago?

A. Yes.

Q. So there are locations that Conoco could directly benefit and gain information to help evaluate from the drilling of the AKI well?

A. That is right.

MR. CARROLL: That's all I would have to ask, Mr. Examiner.

EXAMINATION

BY EXAMINER CATANACH:

Q. Ms. Fly, the Preston Federal No. 2 was dry and abandoned when it was drilled; right?

A. Yes.

Q. That's because there was no dolomite encountered?

A. That's right.

Q. The Smith, is that the well just south of the Preston?

A. Yes.

Q. Southeast. That was also drilled as a dry hole?

A. Yes. And they DST'd it two or three times. I can't remember. I haven't looked at that in a while. Do you remember anything about that? And they got oil off -- I'm not sure if it

was both DSTs, but I feel like they did get it off the top DST, the one at the top of the dolomite.

They had a gravity run on it, and it was 44 degrees, something like that. It was done in the 60s, I believe -- is that right? -- where it was not really known at that point how to produce these wells economically. And off the DSTs they made a large amount of water, and they just consider this to be wet. So they plugged the well.

Q. Does that well have potential for production, do you think?

A. I think so, yes. I don't know whether you could reenter it or not. But the area would have potential.

Q. Were there logs run on that well?

A. Yes.

Q. Have you looked at those logs?

A. Yes. They're older logs. There not the nice suite like we have now. I think they run a neutron. I'm not even sure they ran a density.

Do you remember what they ran on that well?

An old sidewall neutron is what they ran on that.

Q. Looking at your Exhibit No. 13, if you were to move the proposed location north to get out of the floodplain, would you still be able to encounter any dolomite according to your geology?

A. You mean as a 1980-1980 location?

Q. Well, move it north far enough to get out of the floodplain.

A. Well, as you can see, the draw runs between -- can you tell which is the draw contoured here? the straight line with four -- three perforations there and a straight line? It runs right between our originally proposed location and the road that you see there to the north.

They, the BLM, told our regulatory agent that we could not move to the north and be out of the floodplain unless possibly we chose a 1980-1980. And that is just way too risky to step out that far when you have a well just a quarter mile away that has zero dolomite in it.

It's just not a -- it's not recommended to go out near the edge and work your way in. You work from where you think you have your best

economic well and work out towards the edge.

Q. You estimate approximately 250 feet of dolomite at your proposed location?

A. Yes, sir.

Q. What percentage is usually productive in, say, in that kind of interval?

A. In the Mojave, which is the well to the southeast in Section 35, we had about -- I think it ended up being maybe 85 feet of hydrocarbon-bearing column. I think we ended up opening the top interval.

I was able to calculate where I thought the water came in by the use of the gas tapering off on our mud log. And by the DST, the first DST we ran had quite a bit of gas. The second DST had gas and water. And I felt like we tested the contact right there between the water and the gas. The upper part of that DST, second DST, should have been gas-bearing.

EXAMINER CATANACH: I believe that's all I have, Mr. Carroll.

MR. CARROLL: I have nothing further.

EXAMINER CATANACH: This witness may be excused.

MR. CARROLL: We would next call Pinson

McWhorter.

PINSON McWHORTER

Having been duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARROLL:

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

A. Yes. My name is Pinson McWhorter. I'm a petroleum engineer. I work for Yates Petroleum Corporation.

Q. Mr. McWhorter, have you had occasion to testify before the New Mexico Oil & Gas Division and be qualified as an expert in the field of petroleum engineering?

A. Yes, I have.

Q. And are you familiar with the application that is being made today by Yates Petroleum with respect to its Diamond AKI No. 1 well?

A. Yes, I am.

MR. CARROLL: Mr. Examiner, I would tender Mr. McWhorter as an expert in the field of petroleum engineering.

EXAMINER CATANACH: Mr. McWhorter is so

qualified.

Q. (BY MR. CARROLL) All right. Mr. McWhorter, you have testified that you're familiar with this application. There's several issues that have been raised. First of all, with respect -- let's try to deal with some general problems first, and what have you.

And Yates Petroleum has been asked to move this or been told to move this location by the Bureau of Land Management. Has Yates Petroleum considered drilling a deviated hole here? And if they have, would you, please, tell us the reasoning process they went through and what decision they reached?

A. Yes. We have considered the possibility of being a surface location that we could deviate back to an orthodox bottomhole location. We determined that the cost to drill that and contingencies that are associated with that, plus the completion considerations and the production considerations, were more risky than the prospect of being assigned a penalty on an unorthodox location.

Q. Is this particular area known to have deviation problems, Mr. Pinson [sic]?

A. Yes, it is. That's one of the problems that we considered in the risk analysis of deviating this well, is this particular area of the South Dagger Draw Pool is plagued with some hole deviation problems just uphole and vertical section from the Canyon.

Additionally, in addition to that risk factor, to complete a deviated hole is a more risky proposition than a quote, "straight hole," vertical hole. The third risk is that to produce such a well, the production problems that are generally associated with such a well are greater than they are with a vertical hole.

Q. Mr. Pinson [sic], these wells out in the Dagger Draw area are notorious for the amounts of water that have been dealt with, produced and dealt with, disposed of, are they not?

A. That is correct.

Q. And when you make the statement that you encounter -- anytime that you drill a deviated hole, you encounter increased completion and production problems, but aren't those the normal increased problems that you encounter with a deviated hole somewhere else are even

multiplied more so because of the unique nature of this reservoir and the amounts of water and the equipment that are necessary to do that; is that a fair statement?

A. That is correct. The risks that I addressed there are incremental risks on the risks that are already inherent in the drilling and producing of wells in this field which already have more than normal share of production problems and drilling problems.

Q. Mr. McWhorter, you have prepared certain exhibits for use to aid your testimony today, have you not?

A. I have.

Q. Mr. McWhorter, in order to aid the expediency of your testimony, I'm going to ask why don't you make your presentation, using Exhibits 5 through 8, and go through it at your speed without my interruption, if you would.

And as you come to each of your exhibits, please identify the number and what it is for the record and then describe its significance as you try to make each of your individual points.

A. Fine. Beginning with Exhibits numbered

5 and 6, those should be viewed in concordance with one another because they're related to one another. The issue here -- in the assignment of any penalty, one of the issues is if we are to gain approval of an unorthodox location moving from an orthodox 1980-660 location to our proposed location, one of the issues is what incremental drainage would we have against the Conoco acreage?

Consequently, I have addressed that in these two exhibits, Exhibits 5 and 6. One is a drawing showing 320-acre drainage circles. Exhibit 6 is a summary of penalty calculations.

Now, these penalty calculations are calculations performed in a methodology that has been used by the Oil Conservation Division in the past. These penalty calculations, my recommendation, would be applied against the gas well's top allowable. The top allowable -- the way the top allowable is calculated is set forth in the current field rules 53-53, and we'll go into that in a moment.

But essentially we have to compensate and correct for distances in the -- essentially for purposes of coordinate system, X and Y

direction, north-south, east-west direction differences. I have chosen the X direction to be in the north -- I mean the east-to-west direction, the Y direction is in the north-south direction.

Essentially the formula amounts to taking the orthodox distance in the X direction minus unorthodox distance divided by the orthodox distance. And for this it comes out to be a 15 percent deviation. The Y direction, which is the north-south, is essentially the same algorithm again. And it comes out to be a 45 percent deviation.

Thirdly, the third component of this formula is what is termed the excess area ratio. In other words, by moving the drainage area to the south and east, of course the drainage area of the well would consequently be moved, and the point of this calculation is to calculate how much excess drainage this well at that location would have compared to 320-acre standard location, orthodox location.

Well, planimetering that area out, it comes out to be 30 acres, divided by 320 acres, about 9 percent, so taking these three components

and averaging them, which is the accepted method of doing it, if we were to use additive techniques in determining a penalty, and of course one could wind up with a greater than 1 percent penalty, comes out to be a 23 percent penalty.

Exhibits 7 and 8 are similar calculations, and they're based not on the standard fee or proration unit of 320 acres, but on my engineering estimate of what this well would drain, 270 acres. And it shows the same type of calculation again. Again, the deviation from the east-west direction, which is the X direction, the deviation from the north-south direction, which is the Y direction, the excess area ratio, and that comes out to arithmetic average of 23 percent.

So that explains exhibits 5, 6, 7, and 8 and how we came up with a recommended penalty amount. Now --

Q. All right. Just so the record is clear, Mr. Pinson [sic], what is the recommended penalty amount that Yates Petroleum is presenting to this Commission which you feel would be in compliance or in accordance with the mandate that

the OCD has, that of preventing waste and protecting correlative rights?

A. Well, sir, the penalty that we are recommending is 23 percent based upon the calculations, based upon how much excess drainage area we see, and how much we are deviated towards the Conoco acreage.

Q. Now, Mr. McWhorter, you have had an occasion to review the prehearing statement that was filed by Conoco who has made an appearance --

A. That's correct.

Q. -- in opposition in today's hearing?

A. Yes.

Q. And in that statement of opposition, were certain penalties at least suggested or distances given, percentages given in that prehearing statement?

A. Yes, they were. And their directional deviation factors are in fact the same as what we have, Yates Petroleum Corporation has estimated and calculated.

Q. Okay. Your 15 percent and 45 percent, being your X and Y coordinates --

A. Yes.

Q. -- they appear to be the same that

Conoco put in their prehearing statement?

A. That is correct.

Q. The prehearing statement also made a statement which was that approximately 60 percent of the Yates spacing unit is nonproductive. Mr. McWhorter, do you agree or can you agree with that statement?

A. Well, sir, no, I cannot. If a person were to take and just simply look at the map, the isopach, Canyon dolomite, drawn by Mrs. Fly --

Q. Okay. We're talking about Exhibit 10.

A. That is correct, Exhibit 10. -- and one would go to the orthodox location, which is 1980 from the west, 660 from the south, and inscribe a 320-acre drainage circle, approximately 10 percent of the area of that circle would be out of the boundaries of the zero dolomite. So, no, I cannot agree that 60 percent of the Yates area is nonproductive.

Q. You made reference a moment ago that there are field rules for this particular field; is that correct?

A. Yes, that's correct.

Q. And this particular pool has been -- the nomenclature given to it by the Commission is

that it is an associated oil and gas pool; is that correct?

A. That is correct, it is an associated pool.

Q. With respect to it being an associated oil and gas pool, the Commission in its rules has determined how the allowable or specified how the allowable shall be arrived at; is that correct?

A. That is correct.

Q. Would you briefly describe how the allowable then should be determined according to the present field rules for the Diamond AKI well should it be found to be productive?

A. Yes, sir. As per the field rules for the South Dagger Draw Pool, in Order 5353, it says that 320 -- 120 acres shall be the proration unit for a gas well. It says 320 acres shall be the proration unit for an oil well.

In addition to that, it says that the gas well allowable shall be determined from, number one, the top unit oil allowable; number two, the limiting GOR for the field; number three, an acreage factor, which is a combination of the number of acres, proration unit, for an oil well and the number of acres, proration unit,

for a gas well, which is 320 and 320. And no matter how times you divide that, it still comes out to be 1. So that acreage factor is 1.

So it's currently for South Pool, the 320 top unit oil allowable is 1400 barrels of oil a day. The limiting GOR is 10,000 standard cubic feet per stock tank barrel. Therefore, the gas allowable per field rules is 14 million a day for 320.

Q. If the Commission -- or Division, excuse me, were to accept the recommendation of Yates Petroleum for a 23 percent penalty, how then is it your understanding that the Commission would then apply that penalty to this well?

A. It's my understanding that the penalty, which we recommend of 23 percent, would be a deduction. That 23 percent would be a factored deduction from the top gas allowable as determined per the field rules.

So it would be 77 percent times 14 million a day, which is 10,000,780 Mcf a day, at standard cubic feet a day, would be the penalized allowable.

Q. Mr. McWhorter, is it your expert opinion that it is in the interests of the

prevention of waste and the protection of correlative rights that the Commission grant the application of Yates Petroleum with respect to its Diamond AKI well?

A. Yes. That's correct.

Q. And is it also your expert opinion that the appropriate penalty that is consistent with that mandate of preventing waste and protection of correlative rights would be a penalty factor of 23 percent?

A. Yes.

Q. Mr. McWhorter, with respect to the exhibits and any other testimony or items that you've covered, are there any other issues that we have neglected or that you would like to testify to?

A. No, there are not.

MR. CARROLL: Mr. Examiner, I would at this time --

Q. Well, first of all, Mr. McWhorter, Exhibits 5, 6, 7, and 8, were they prepared by you or under your direction and supervision?

A. Yes, they were.

MR. CARROLL: Mr. Examiner, I would move admission of Exhibits 5 through 8 at this

time.

EXAMINER CATANACH: Exhibits 5 through 8 will be admitted as evidence.

MR. CARROLL: I pass the witness at this time.

EXAMINER CATANACH: Mr. Kellahin.

MR. KELLAHIN: Thank you, Mr. Examiner.

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. McWhorter, do you share Ms. Fly's conclusion that the well located as Yates proposes to locate it is going to be a gas well?

A. Yes. My best estimate of what that well will do is produce predominantly gas base.

Q. In calculating the risk, looking at the costs of the well, do you assign for purposes of going forward with this project a certain volume of gas to be recovered by this well?

A. Yes, I do.

Q. What did you assign for purposes of this well?

A. At the current location I assigned 5 Bcf for this well.

Q. Have you made an engineering study to

see whether or not you can put 5 Bcf of gas in the west half of section 34 above the zero line of the dolomite on Ms. Fly's exhibit?

A. No, sir. What I have made a study of is that you can put 5 Bcf of gas within a 320-acre drainage radius of the standard orthodox location, 1980 from the west, 660 from the south.

Q. Have you determined how many productive acres are in the pool within the boundaries of the west half of Section 34?

A. No, sir, I have not because that would hinge on what we were going to define as productive. But I have determined how many acres are in that west half that are within the confines of Mrs. Fly's zero dolomite line.

Q. I understand that argument. Can you answer my question, which is within the west half of Section 34, what is the volume of gas in place within that spacing unit?

A. The volume of gas in place within that spacing unit is in excess of 5 Bcf.

Q. How many productive acres are contained within the west half of 34?

A. Could you define what you mean by

"productive"?

Q. Yes, sir.

A. Are you talking about --

Q. Scribe a rectangle around the west half of 34 --

A. Yes.

Q. -- and look at the zero line that Ms. Fly has put on that display and tell me how many acres are above the zero dolomite line that leave you within the west half of the section?

A. Okay. That's a different question. The number of acres that are within that --

Q. Yes, sir.

A. -- zero dolomite is 151 acres.

Q. Okay. Have you done any volumetric calculations with regards to this prospect?

A. Yes, I have.

Q. What is the percentage of recovery, the recovery factor that you've assigned to recovering the gas in place by this well? What do you use?

A. Well, the recovery, the recover factor itself is probably in the neighborhood of 60 to 70 percent.

Q. Okay. So if my engineer, in doing his

drainage calculations, has used a recovery factor of 85 percent, he's been very generous?

A. Actually I did not use a recovery factor calculation. What I do is take my initial reservoir pressure, calculate the formation volume in this reservoir pressure, calculate and extrapolate the formation volume and project -- what I would project to be abandonment pressure, the difference between those two is going to be one in the same.

And you do a volumetric calculation and you can calculate what you think that you could produce under that acreage.

Q. Okay. When we look on Exhibit No. 11 and look at all these gas wells on here, what was the best gas well?

A. Exhibit 11?

Q. Yes, sir.

A. Is that Mrs. Fly's?

Q. Yes. One of these that will help me find the gas wells. Which is the gas well that had the greatest initial potential?

A. Well, the gas well that had the greatest initial potential would probably -- it would be a tie between the Preston Federal No. 1

in Section 35 --

Q. All right, sir.

A. -- and the Mojave in Section 35 of 20-1/2 South, 23 East.

Q. What is the calculated absolute open flow of the best of those two wells?

A. Those two wells both potentialed for just a little over a million a day -- is what they potentialed for.

Q. Okay. And those are the two best wells in this area?

A. If you're looking at those sections right there, that is correct, sir.

Q. And when we go back to figure out this penalty, applying your methodology, by taking the maximum oil rate of 1400 barrels a day times the gas-oil ratio, gets me a top allowable of 14 million a day?

A. The way I calculated it, that's correct.

Q. Even a lawyer can do this. 77 percent of that number is then the allowable. And this well is going to have the opportunity under your proposal to produce 10.78 million Mcf of gas a day under the restriction that you propose?

MR. STOVALL: Correct that. 10.7 thousand Mcf.

MR. KELLAHIN: Yes.

Q. (BY MR. KELLAHIN) 10.7 thousand Mcf?

A. 10.7 -- in other words, 10.7 million a day essentially. That is correct. And it's not according to necessarily how I calculated it, but it's according to the rules as set forth in the field rules that I used to calculate it.

Q. Does that sound fair to you?

A. It sounds like what has been set as the way to calculate the unit allowable in this field.

Q. My question was, does that make sense? Does that sound fair to you? Do you find that fair?

MR. CARROLL: I want to make an objection to the question. I don't think that's the purpose of this witness to determine what's fair.

MR. KELLAHIN: Sure it is. He has told me that this penalty is going to resolve equity between the parties and justify his unorthodox location.

MR. CARROLL: No, he has not. He said

it would prevent waste and protect correlative rights.

MR. STOVALL: I think he can sustain the objection because I don't think "fair" is a term that you can really use a standard to write the order. Make some criteria, Mr. Kellahin.

Q. (BY MR. KELLAHIN) Under your penalized provision, in all reasonable engineering probability, your well will never be penalized?

A. There's a good probability that that is true.

Q. The proposed allowable that you penalize this well for is going to be ten times higher than the capacity of the best well in this area to produce?

A. If you're looking at these wells that are depicted upon this map, that is correct.

Q. No further questions.

A. But that's not the top allowable that could be produced by a well in that location.

MR. KELLAHIN: That concludes my examination.

MR. CARROLL: Mr. Examiner, I have just a couple of questions I could ask now or later at your discretion.

EXAMINER CATANACH: Go ahead.

FURTHER EXAMINATION

BY MR. CARROLL:

Q. Mr. McWhorter, you work regularly in this Dagger Draw area, do you not?

A. Yes, sir.

Q. Are you aware of any instances where the Division has deviated from the published field rules for this pool with respect to the determination of the allowable for the gas well?

A. I am not.

Q. There are quite a number of wells that have been drilled out there; is that correct?

A. That is correct.

Q. And if some penalty assessment were made, as I think Mr. Kellahin will suggest that it be based on the absolute open flow of this well, this would be to your knowledge the only such penalty exacted in this particular pool in this manner?

A. Correct. That is correct.

Q. Do you know of any -- now, excuse me. Mr. Kellahin proposed to you what he, I think, is trying to make out as a situation which the Commission or the Division should avoid, and that

is that this well might never be penalized. The reason that this well might never be penalized is that it might never be as good as the rules would allow?

A. That is correct.

Q. And so in effect, with respect to the rules that were established for this pool, it's already been penalized because it can't meet the maximum that the OCD has already decreed after the hearing should be proper and should be applied to wells in this area?

MR. KELLAHIN: That question is argumentative, Mr. Examiner, and I object.

MR. STOVALL: I don't think it's very helpful.

MR. KELLAHIN: The objection or the question?

MR. CARROLL: Both.

MR. STOVALL: I think we understand what you're saying, Mr. Carroll. I don't know how many times we need to have that type of philosophical approach repeated for the benefit of the Examiner.

MR. CARROLL: I just want to have an expert testifying that way, Mr. Stovall.

Q. In your experience, Mr. McWhorter, are you aware of any sound engineering reason why we should deviate from the rules in this one particular case?

A. No. I'm not.

MR. CARROLL: That's all.

MR. KELLAHIN: One follow-up question to Mr. Carroll's point.

FURTHER EXAMINATION

BY MR. KELLAHIN:

Q. In your experience in the pool, Mr. McWhorter --

A. Yes.

Q. -- have you found any examples that are analagous to this situation where we're dealing with a gas well in the pool at a proposed unorthodox location that was taken to hearing and for which there was a protest?

A. To my recollection, where there was a protest, no.

MR. KELLAHIN: I couldn't find any either. No further questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. McWhorter, the gas wells in this

area, are they typical of the gas wells in the pool?

A. Yes, sir, they are typical of the gas wells in the pool and in the quantities of hydrocarbons and water that they will make on a given daily basis and in the net porous dolomite interval that is encountered in these wells.

Q. As far as producing capabilities, they are pretty typical of wells in the pool?

A. They are typical in the sense that they are more like an average well. There are better gas wells in the pool that are on the western plank of the pool.

Q. Do you know why the gas-oil ratio for this pool was set at 10,000 to 1?

A. Well, sir, yes, sir, I can tell you request why that was done. At a hearing that initially was initiated by an application by Conoco to raise the allowable in Dagger Draw North Pool, Yates also concurred and filed a simultaneous application to raise the allowable on an equivalent basis in the south pool because both the -- at that time, I think you'll find as a matter of record, that both witnesses from Conoco and from Yates agreed that the original

division of the north and south pool is artificial; that in fact this is one common reservoir from north to south; and that to make it equitable to all parties concerned, they should have on a per-acre basis the same allowable and limiting GOR. The limiting GOR in the north pool at the time was 10,000 standard cubic per stock tank barrel.

So, as per order that came out subject to that, that limiting GOR was adopted in order to equilibrate the rules between the north and south pool.

MR. KELLAHIN: There's one difference. The spacing is different in the two pools.

MR. STOVALL: I was going to ask you, was that in the last, oh, three or four years?

THE WITNESS: Yes, sir.

MR. CARROLL: Last year or so.

MR. STOVALL: You've got different spacing so you just multiplied the allowable?

THE WITNESS: That is correct.

MR. CARROLL: I was actually the attorney that presented the Yates case on that. And I'm not sure if Mr. Kellahin may have been the one presenting the Conoco case. But we did

have problems because we had old Division orders, lines of ownership already set up. And we would have had to have gone in and readjusted that, so we had to make -- the equating process to be something other than the redrawing of the proration units.

MR. STOVALL: And if I remember correctly, that was done primarily for the oil wells in the pool; is that right? Wasn't that the main consideration, was to raise the GOR high enough to enable you to get a sufficient amount of oil out of the oil wells?

MR. KELLAHIN: I don't think we changed the gas-oil ratio.

MR. STOVALL: Didn't you?

MR. KELLAHIN: We changed the --

MR. CARROLL: There was a change to get them equal. One was changed; one was not, as I recall.

MR. STOVALL: Conoco wanted to raise it.

THE WITNESS: I think the gas-oil ratio in the south pool was changed.

MR. STOVALL: That's kind of my recollection. They raised the allowable on the

160-acre pool and then brought the 320-acre pool up and then brought the GOR up with it.

MR. CARROLL: Yeah.

MR. STOVALL: But again the GOR is really a more -- the level is driven for the oil wells and not for the gas wells.

MR. CARROLL: That's true.

EXAMINER CATANACH: I don't have any more questions of the witness.

MR. CARROLL: That would conclude Yates Petroleum's case, Mr. Examiner.

MR. KELLAHIN: I call Mr. Bill Hardie.

BILL HARDIE

Having been duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

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

A. My name is Bill Hardie. I'm a geologist with Conoco, Inc., in Midland, Texas.

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

A. Yes, I have.

Q. Pursuant to your employment by your

company, have you made an investigation of the geology surrounding this application by Yates for the subject unorthodox well location?

A. Yes, I have.

Q. Are you generally familiar about the geology in the South Dagger Draw Pool that's the subject of the hearing?

A. Yes, I am.

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

EXAMINER CATANACH: Mr. Hardie is so qualified.

Q. (BY MR. KELLAHIN) Mr. Hardie, let me direct your attention, sir, to Exhibit No. 1. Would you identify that for me, please?

A. Exhibit No. 1 is just a location plat map. On it we show Conoco's 100 percent working interest acreage in solid yellow. We show Conoco's partial working interest acreage in crosshatched yellow. The short Section 35 Conoco has, I believe, about a 55 percent working interest, a little more than half.

The dotted green lines refer to the locations of two cross-sections that I've prepared. And we'll need to refer to this map

later on when we look at those cross-sections.

Q. Let's set that aside as our index map. When you, as a geologist, are looking at this prospect, do you do what Ms. Fly did, and that is to develop a series of evaluations, interpretations to show the thickness and the location of the dolomite?

A. Yes, I do.

Q. Let me direct your attention to Exhibit No. 2. Does this represent your work?

A. Yes, it does.

Q. Describe for us what you've done.

A. This is an isopach map of the dolomite thickness. The reservoir at Dagger Draw is a carbonate margin buildup. It was at some point after its deposition preferentially dolomitized and developed a very coarse secondary porosity, which essentially created the reservoir.

So that the geometry of the field is that of a linear dolomite fairway that extends generally in a northeast-southwest direction. The thickness of that fairway is shown here, attains a maximum along the axis, or the middle of it, a little over 400 feet in thickness. And it thins out toward the flanks to a zero line on

either side. And that zero line essentially defines the limits of the dolomite reservoir.

Q. Describe for us geologically the relationship of this southern portion of South Dagger Draw and Indian Basin farther south.

A. These are we believe that Indian Basin and South Dagger Draw are a continuous reservoir and that in fact Indian Basin, South Dagger Draw, and North Dagger Draw are all part of a continuous reservoir.

Q. When you look at the geology, does it surprise you as a geologist to find in this particular area of Yates' application that the operators are drilling gas wells?

A. No, it does not.

Q. Why not?

A. Because of the structural elevation of these wells. And the structural elevation of the dolomite fairway itself is so high that we are, at this location, we're up in the gas cap.

Q. Do you concur then with Ms. Fly and Mr. McWhorter that in all probability this well located as Yates proposes is going to be a gas well?

A. I do.

Q. Let's use this display and have you give us some of the information on the specific control points, the wells that you have analyzed to make your interpretation and your judgment about those wells. Let's start with the Preston 1. That's in Section 35, and it's got a circle drawn around it. Ignore the circle for now. Describe Preston 1 for me.

A. Preston Federal No. 1, I think, was drilled in 1970. It had an I/P of around 1.5 million cubic feet of gas per day. The Preston Federal 1 has been producing that exact same amount since 1970 when it was completed. And it's probably the single well for which we can base a lot of our interpretations on because it has the most history. It's been producing for over 20 years.

Q. Mr. McWhorter identified that as one of the two of the best wells in that immediate area. Do you concur?

A. I do.

Q. The other one he identified is the Mojave 1.

A. The Mojave 1.

Q. Do you also concur that is the other

one?

A. I do.

Q. Describe for us the important information about the Mojave 1.

A. The Mojave 1 is fairly similar to the Preston Federal No. 1. It had an initial potential of slightly higher than the Preston Federal No. 1. I think about 1.6 to 1.8 million cubic feet of gas per day. I'm not positive about the exact I/P. But our analysis to date indicates that it should perform in a similar fashion to the Preston Federal No. 1.

Q. As we move clockwise around, let's find the odd-sized Section 34 that has the Preston 4.

A. Yes.

Q. Tell me about that well.

A. The Preston Federal No. 4, I believe, was drilled in the -- I think it was drilled in the early 80s by Conoco. It was drilled without the benefit of some of the more recent knowledge that we have of the dolomite reservoir.

We completed the Preston Federal No. 4 throughout the entire dolomite interval in what appeared to be productive. We've since learned that by completing in the uppermost portion of

the dolomite reservoir, you can avoid the typically high water cuts that we saw in the Preston 4.

And we intend to go and reenter that wellbore and isolate those lower perforations and open additional perforations higher up in the fairway and bring it on-line.

Q. Let's go now into Section 34 and, looking at the east half of 34, describe for us the Preston No. 2 well.

A. The Preston Federal No. 2 well was drilled, I think, about the same time as the No. 4 and was one of these cases where it came as a shock that we completely missed the dolomite fairway. The Preston Federal No. 2 had no dolomite whatsoever. It's a dry hole. It had no shows in the Cisco.

Q. Move down to the 40-acre offset to the south in the southeast quarter of 44 and you pick up the Smith No. 1. Describe that well.

A. The Smith No. 1 was drilled in the early 60s by another operator. It encountered significant drilling problems through the Cisco and for one reason or another they had to kick off the well because they lost the borehole so

they kicked it off and attempted a completion in the Cisco.

In each of those legs that they drilled, they ran some DSTs. And as the Yates engineer and geologist testified, one of those DSTs reported a significant amount of oil that was circulated out. Our opinion is that this may have been mistakenly called an oil and that it was perhaps a condensate because there was no other indication that the well should be an oil producer.

Q. What is Conoco doing, if anything, for further development of wells in the east half of 34?

A. I'm sorry. Could you ask that again?

Q. Sure. In the east half of 34, what, if any, plans does Conoco have for additional wells?

A. Conoco is currently planning to stake and drill a location in the southwest of the southeast quarter of Section 34, which would essentially be a twin to the Smith No. 1 well.

Q. Previously you had a staked location in the southeast of the southeast of 34?

A. Yes, we did.

Q. Why was that well not drilled?

A. That well was staked prior to the drilling of the Mojave No. 1 well. At that time both Conoco and Yates believed there was a chance that there may be an oil column that far south.

Subsequent to the drilling of the Mojave and the extensive testing that Yates did in the Mojave, we now know that there is no oil column in this part of the field. Therefore that location is no longer viable.

We feel it's important to increase our spacing away from the Mojave and away from the Preston Federal No. 1 and place it in the southwest of the southeast.

Q. Let's go now to Exhibit No. 3. Would you identify and describe that exhibit for us?

A. Exhibit No. 3 is a structure map on the top of the Cisco Canyon dolomite. This map shows a prominent northeastward dip on that surface, the top of the reservoir, such that we're looking at the highest part of the reservoir down at the southwest end of the map. And, as we move down at the northeast, we get progressively lower.

This map helps to explain why we see gas and condensate production in North Indian Basin at the southwest end of the map, gas and

condensate production in the Preston Federal-Mojave area. And then as we get increasingly lower, we eventualy start seeing oil production in Yates' acreage in Sections 26 and 25. It simply is a structural relationship.

My interpretation of the southernmost limit of oil production is shown by the green dashed line.

Q. When you combine the structure map and the isopach, what ultimate geologic conclusion do you draw about Yates' location in the west half of 34?

A. When you look at the west half of Section 34, you can see that by moving to an unorthodox location, encroaching on Conoco's acreage to the south and encroaching on Conoco's acreage to the east, that they're also gaining structural elevation in the well.

If you refer back to Exhibit No. 2, you can also see that by moving to the south and east, the Diamond Federal No. 1 also increases in reservoir thickness from approximately 150 feet to over 200 feet according to way I've interpreted it.

Q. Have you provided the engineering staff

at Conoco the necessary geologic interpretations from which they can do productive acreage calculations for the spacing unit in the west half of 34 that Yates proposes to dedicate their well to?

A. We have, Conoco's engineer and myself, have worked on volumetrics for not only Section 34 but also other wells in that area, Section 35 and the Mojave well.

Q. Let's look at the cross-section, the first one, Exhibit 4, which is the north-south cross-section?

A. That is correct.

Q. Identify and describe that for me, please.

A. This is cross-section A-A prime. And if you'll refer back to Exhibit 1, you can see the location of that cross-section. This cross-section trends parallel to the axis of the dolomite reservoir. And on it we can see, on each log that I've exhibited, we've got on the left a gamma ray curve. On the right we've got porosity curves, either neutron or density porosity curves.

The purple shading is the dolomite, or

dolomitized portion of the reservoir. The green lines that connect the various wells are connecting correlative markers that you can find in the gamma ray curve. And they give you an indication about the structural dip across this line.

This line clearly shows a significant change in structural elevation. As you come from the North Indian Basin on the south side of the cross-section, you move down-dip as you approach South Dagger Draw acreage. It also shows a significant difference in elevation between Marathon's wells in North Indian Basin and Conoco's wells in South Dagger Draw.

We feel like this difference in structural elevation is the reason why the wells in South Dagger Draw have to be completed in the very uppermost portion of the dolomite reservoir. Because as you move down-dip, as you get lower in the section, there's still gas down there, but the water cuts become prohibitive from an economic standpoint.

Q. Turn now to Exhibit 5 and identify and describe the B-B prime cross-section.

A. Cross-section B-B prime, as you can see

on Exhibit 1 again, is generally an east-west cross-section through the Preston 2, Smith 1, Mojave 1, and the Depco No. 1 Shell Federal.

I've constructed this cross-section mostly just to show the abrupt termination of the dolomite reservoir between the Smith No. 1 and Preston Federal No. 2 wells. This is also shown on Exhibit No. 2 where we look at the dolomite thickness. And you can see that between the Smith No. 1 and the Preston 2, the dolomite pinches out.

Essentially what we're showing here is that the north half of the 320-acre proration unit to which the Diamond No. 1 well would be dedicated is nonproductive. We calculate that approximately 660 acres of that Diamond Federal No. 1 proration unit would be productive.

Q. Say it again. You said 660. I think you misspoke. Try again. Forget what you said and start over.

A. Okay. Approximately half --.

MR. STOVALL: Coaching.

A. -- approximately half of the proration unit assigned to the Diamond Federal No. 1 will be productive.

Q. And how many acres is that?
A. One hundred and sixty. I'm sorry.
Q. (BY MR. KELLAHIN) All right. You said 660.
A. Right.
MR. STOVALL: Distances, not acres.
Does that mean they get a double allowable, Mr. Kellahin?
MR. KELLAHIN: Whatever they want.
Q. (BY MR. KELLAHIN) As a geologist, when you look at the reservoir and the relationships of the existing wells and the opportunity for those wells to compete one with another, does the Yates well gain an advantage at the unorthodox location?
A. We feel that the Yates well does because it encroaches on Conoco's acreage in two directions. It encroaches toward the south by a distance of 300 feet beyond a legal location. It encroaches toward the east by a distance of 100 feet beyond the legal location. It also in so doing encounters a thicker dolomite section and a higher structural position.
Q. In your opinion as a geologist, what factors should the Examiner consider in

determining a penalty to impose upon the Yates well location, if he approves that location?

A. In order for the penalty to be meaningful, we feel like it should be based on an initial potential test of the well. Our experiences so far have shown that wells in South Dagger Draw, because of their lower structural position than North Indian Basin wells, cannot produce 14 million cubic feet of gas per day.

So that a penalty on 14 million cubic feet of gas would be meaningless and that it should be based on an initial potential test.

Q. Can you describe for the Examiner what components should go into arriving at an appropriate penalty?

A. There are two components that we feel are important to consider in arriving at a penalty. The first of which would be the footage factor, the encroachment factor upon Conoco's acreage. The second would be the lack of productive reservoir underlying the 320 acre proration unit. Not all of that unit is going to be productive; therefore, it should be penalized.

Q. Were Exhibits 1 through 5 prepared by

you?

A. Yes, they were.

MR. KELLAHIN: That completes my examination of Mr. Hardie. We move the introduction of his Exhibits 1 through 5.

EXAMINER CATANACH: Exhibits 1 through 5 will be admitted as evidence.

Mr. Carroll.

EXAMINATION

BY MR. CARROLL:

Q. Mr. Hardie, you indicated that the, I believe it's the Preston No. 4 well down in section -- the nonconventional Section 34 in 20-1/2, that Conoco has plans to go back in and apparently squeeze off the lower section of the dolomite and try, I guess, a recompletion attempt; is that correct?

A. That is correct.

Q. How long has this well been shut-in?

A. This well has been shut-in essentially since it was drilled.

Q. So almost ten years then?

A. That is correct.

Q. How long has Conoco had plans to go in and do what you've just described?

A. We've had plans to do that since we started figuring out the reservoir, which has been approximately about a year, maybe a little longer.

Q. Have you prepared AFEs and gone that far in preparation at this time, Mr. Hardie?

A. We have prepared to do this. The only thing that has held us back has been a gas compression problem that we have in Dagger Draw. Until very recently we were overproducing in terms of gas -- I'm sorry, I misstated that.

We had more gas production than we could handle in our compressors. And we also had the Preston Federal 1 shut-in as a result of that. We've since gotten additional compression and are prepared now to recomplete the Preston Federal No. 4.

Q. When is this slated for this recompletion attempt?

A. It would be this year. I can't give an exact date, but we plan to do it this year.

Q. With respect to your proposed location up in the east half of Section 34, when was the decision made to move that location to the east from the one that has been shown on the land

maps?

A. That location move would have been subsequent to the drilling of the Mojave No. 1 well.

Q. All right. And how long has the Mojave No. 1 well been drilled, Mr. Hardie?

A. Approximately three months. I'm not absolutely certain.

Q. You made -- let me ask this question first. I apologize.

You had a chance to look at Yates Petroleum's exhibits, in particular Exhibit No. 11, which was prepared by Ms. Fly, did you not, her structure map on top of the Canyon dolomite?

A. Yes.

Q. The structures depicted by that map and the one depicted on your structure map, Exhibit 3, differ somewhat, does it not?

A. Yes, they do.

Q. And in fact, if you look at Ms. Fly's, her interpretation of the structure, your statement that by moving this well from the orthodox to the unorthodox position would increase the elevation, would not hold true under her mapping; is that correct?

A. I'm not sure what contour what -- this contour interval runs very close to the proposed well location -- what that is.

Should that be minus 3800 feet?

MS. FLY: That would be minus 3750.

A. Okay.

Q. But no matter what it is, whether it's 3800 or 3750, the moving of the well would not move, at least as depicted on that structure map, would not cause that interval to be higher in position?

A. According to her interpretation.

Q. So the interpretation of Ms. Fly and your interpretation do differ with respect to that one issue?

A. They do. The reason that my map shows that the well location would be higher structurally at the unorthodox location is based on the difference in elevation between the Smith No. 1 well and the Mojave No. 1 well where you see a trend moving from the Smith well of minus 3762, according to my interpretation, toward a higher position in the Mojave well of minus 3715.

That general trend indicates that as

you move to the southeast, you gain structural elevation.

Q. And, as Ms. Fly testified that she had information from all these wells, you must assume that she had advantage of the same information that you just told us about?

A. That is true.

Q. Now, also on your Exhibit No. 3, the green dashed line, now am I correct in stating that everything that is to the south of that green line and to what would be the west of that green line is what you're calling the gas gap, for lack of a better term?

A. According to my interpretation, yes.

Q. So when you get -- there is probably three-quarters of a mile in distance from that green line to the proposed Diamond AKI location roughly?

A. Roughly.

Q. So the proposed location is well within or already well within the gas cap; is that correct?

A. Yes.

Q. And this Preston No. 1 well, which is actually almost situated on a direct line between

the AKI and this green hashed line, that well has been producing for something like 20 years; is that correct?

A. That is correct.

Q. And it's been a gas well and it's producing today just as good as it was producing when it was completed?

A. It produces gas and some small amount of condensate.

Q. And that's what it's done from day one to the present time?

A. That is correct.

Q. Now, I believe you were present when Mr. McWhorter was testifying about the methodology of figuring what the allowable is under the present field rules; is that correct?

A. Yes.

Q. And I guess because Mr. Kellahin, he came up with the same $14 million figure, I guess you're not really disagreeing much with Mr. McWhorter's at least extrapolation using the rule?

MR. KELLAHIN: You misspoke. I wish it was dollars.

MR. CARROLL: You're right. Mcf. I do

too.

Q. So you really, at least for purposes of our discussion right now, it appears that Conoco and Yates are interpreting the rule and applying it in the same basic fashion?

A. That is correct.

Q. Has Conoco made any application to amend that particular field rule dealing with the calculation of the allowable for gas wells in this associated gas pool?

A. No, we have not.

Q. Is one contemplated to your knowledge at this time, Mr. Hardie?

A. To my knowledge at this time, one is not.

Q. Mr. Hardie, are you aware, what I -- this proposal of yours -- and Mr. Kellahin, he didn't really pull it from you as a specific proposal, but he did it in the sense of what factors do you think would be meaningful for the Commission or the Division to utilize here. Frankly, I've lost my train of thought. Excuse me, Mr. Hardie. I'll try again. I apologize.

With respect to these concepts that you have indicated to Mr. Kellahin that you think are

significant and should be given consideration by the Division, are you aware of any examples in this consolidated oil and gas pool, being comprised of the North and South Dagger Draws, where a well has been penalized and the penalty has been applied to what you have been basically advocating, that of going against the initially, the absolute open flow of the well and as verified by production tests, are you aware of wherever the Commission has utilized that standard?

A. I'm not that familiar with various penalties that have been applied.

Q. So with respect to this pool, you just don't, you're not aware of any, to your knowledge anyway?

A. With respect to this pool, I'm not aware of that, no.

Q. Okay. Now, you -- and if I get out of your area of expertise, please tell me so. Mr. McWhorter in his exhibits, he took the two locations and he drew circles around the area of drainage.

A. Uh-huh.

Q. That conceptually is what I'm talking

about. Is that not the way drainage is looked upon as occurring when you look at a particular location, that being drawn in a circle around that particular location that's in controversy?

A. You are -- I am stretching the limits of my expertise by answering this. But I do know that it depends on -- the shape of that drainage area depends on various factors and various characteristics of the reservoir. For example, is there a preferred flow path? And without any data to indicate a preferred flow path, the tendency is to go ahead and draw it as a circle.

Q. Do you have any data or aware of any preferred flow path as you've talked about?

A. I do not.

MR. CARROLL: I have to confer with my geologist. I'm not as expert in the matters of geology as my cocounsel.

I have no further questions.

MR. STOVALL: I'd like to ask one back to the geology. I sometimes get into that.

EXAMINER CATANACH: I know.

EXAMINATION

BY MR. STOVALL:

Q. In the prehearing statement Conoco has

essentially said they are opposed to the granting of this application; is that correct?

A. We are opposed to the granting of this application, that is correct.

Q. As a geologist, if this were your tract and the BLM told you you could not drill at an orthodox location, which way would you recommend to your company that it move its well?

A. If it were my tract, I would recommend to my company that we directionally drill to a legal and orthodox bottomhole location from an orthodox surface location. There are legal or there appear to be, according to the topographic map locations which would be approved by the BLM, I don't know this for a fact, but there appear to be on the topo map in the north, northeast -- or northwest quarter of Section 34.

I would most likely, in order to avoid conflict, recommend that we stake a location, a legal surface location and directionally drill to a legal bottomhole location.

Q. In preference to drilling to an unorthodox location with approval?

A. Yes. It's a lot simpler.

Q. You'd rather deal with a directional

motor than the Commission; is that what you're saying?

A. Exactly. I trust the directional motor more.

MR. CATANACH: That's on the record.

Q. (BY MR. STOVALL) I think what you meant to say, you could predict the directional motor more; is that it?

A. That's what I meant.

MR. CARROLL: I move for a directed verdict at this point.

Q. (BY MR. STOVALL) The second part of it, just from a reality and geological producing thing, you've recommended using a productive area factor in the penalty assessment?

A. Yes, I have.

Q. And a productive area is not the basis for allowable in the first place. Is that really truly reflective? I mean, what's your rationale for suggesting that a well that's moved something less than half the distance in either direction should be added to it -- productive acreage, that wouldn't be a factor if that were in an orthodox location?

A. My rationale for that would be the risk

of that zero line on Exhibit No. 2, as Yates has testified and I concur, both of our zero lines are fairly optimistic. So that a pessimistic zero line would be moving to the southeast. If that were the case, there would be, you know, perhaps ten to 20 productive acres on Yates' 320-acre proration unit. And if that well was productive, it would drain almost all of its reserves from Conoco's adjacent acreage.

So that a penalty based on the amount of productive acreage underlying the proration unit seems appropriate.

Q. If they go back and directional drill, and your assumptions are the same there, then they're still going to drain most of their reserves from Conoco's acreage without limit; right?

A. That's correct.

MR. STOVALL: Okay. That's all I have. I got him in deep enough trouble.

EXAMINATION

BY EXAMINER CATANACH:

Q. You do have confidence that your zero line doesn't extend any farther north?

A. I think my zero line extends a little

farther north than Yates'. Just a quick comparison, it appears to be a little more optimistic. Geologists are rewarded for being optimistic.

MR. STOVALL: Do you think there's any possibility it could be further north? Isn't that what you meant?

EXAMINER CATANACH: Right.

MR. STOVALL: In other words, might there be more productive acreage than you have mapped?

THE WITNESS: That could be the case. However, if there was never a well drilled there, you would never know that.

EXAMINER CATANACH: That's all I have.

THE WITNESS: You've heard enough.

MR. KELLAHIN: I'd like to call my engineering witness, Mark Majcher. He spells his name M-a-j-c-h-e-r. And you try not to pronounce the "J," is that how we do it, Mark?

THE WITNESS: That's right.

MR. KELLAHIN: Majcher.

MR. STOVALL: We'll let him pronounce it correctly.

MR. KELLAHIN: See if we're close;

right?

MR. STOVALL: Yes. What's he going to say about the Commission, Mr. Kellahin?

MR. KELLAHIN: Let's wait and see. It may be the highlight of the day.

MARK MAJCHER

Having been 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 Mark Majcher. I'm a reservoir engineer with Conoco, Incorporated, in Midland Texas.

Q. Mr. Majcher, have you on prior occasions testified before the Division?

A. No, sir, I have not.

Q. Summarize for us your education.

A. I have a bachelor's degree and a master's degree in petroleum and natural gas engineering.

Q. In what years?

A. 85 and 89 respectively.

Q. From what institute?

A. The Pennsylvania State University.
Q. Both degrees from that university?
A. That's correct.
Q. Summarize for us your employment background as a petroleum engineer.
A. I spent four years working with Conoco. My first two years were spent in the reservoir study group in Houston, Texas. And the two additional years were spent in Hobbs, New Mexico, and Midland, Texas, also in reservoir engineering capacity.
Q. Do part of your duties as a reservoir engineer include making engineering studies for production in the Dagger Draw Reservoirs?
A. Yes, sir.
Q. Have you worked in conjunction with Mr. Hardie to make an evaluation of Yates' application before the Examiner this afternoon?
A. Yes, sir, I have.
Q. Based upon that study have you reached certain conclusions and opinions?
A. Yes, sir, I have.
MR. KELLAHIN: I tender Mr. Majcher as an expert petroleum engineer.
EXAMINER CATANACH: He is so qualified.

Q. (BY MR. KELLAHIN) Let me ask you to turn to Exhibit No. 6 and identify that for me.

A. Yes, sir. Exhibit 6 is a production history plot of the Conoco operated Preston Federal No. 1, the gas well located in South Dagger Draw. The Preston Federal No. 1 is the oldest well in the area. It has the most data. And, as we can see from the plot, this well has had a long production life and sustained rates.

The gas is outlined in red, the water in blue, and the condensate in green.

Q. Have you examined the data that is available for this well to satisfy yourself that it is accurate and correct?

A. Yes, sir.

Q. Can you determine from the performance of this well that it is in fact a gas well?

A. Based on the fact that it produces about 8 to 10 barrels of condensate a day and 1.5 million cubic feet of gas a day, I would say it is a gas well, yes.

Q. Do you concur with the other three experts that have testified ahead of you that the Yates well location is in all probability going to be a gas well?

A. Yes.

Q. When you have information from the Preston Federal No. 1, as you do here, how have you utilized it in analyzing the impact that Yates' application will have on Conoco's interest in this area? What did you do?

A. Well, I utilized the available data from the Preston Federal 1 to show that gas wells in South Dagger Draw have long production lives, sustained rates, and they drain large areas, which we will go into in a second.

Q. Do you find that these wells are going to drain areas such that the well location for the Yates well will have a drainage area that will extend beyond its spacing unit?

A. Yes, sir.

Q. In analyzing the drainage area have you prepared a P over Z versus "cum" plot of the performance of the Preston Federal 1 well?

A. Yes, sir, I have. That's shown as Exhibit 7.

Q. Why did you want to do that?

A. Well, the reason I wanted to do this is to get a good estimate of the estimated ultimate recovery for the Preston Federal 1 to use in my

volumetric drainage calculations. P over Z versus cumulative gas plot is pretty much an industry standard for doing that.

Q. Have you satisfied yourself that you have enough pressure points over time to establish a reliable decline curve from which to extrapolate ultimate recovery for the well?

A. Without a doubt, even though there are only four pressure points, those are spaced over 20 years and 4 Bcf worth of production, and they do follow a straight line, which would indicate that this well behaves volumetrically, i.e., no significant water influx.

Q. With that information then what did you do?

A. I took the estimated ultimate recovery from the Preston Federal 1 along with numerous other volumetric parameters and determined the drainage area and radius from which the Preston Federal 1 drains the reservoir.

Q. Let me turn now to Exhibit 8, and that is your display of those parameters and the drainage calculation?

A. That's right. This exhibit outlines the data and methodology for that calculation.

Q. What's the end conclusion about the calculation?

A. The end conclusion is that South Dagger Draw gas wells do drain far more than 320 acres. More likely 575 to 640, 650, something like that.

Q. Why is that information important to you in analyzing what to do with regards to the Yates' application for their unorthodox gas well location?

A. Well, it's important to me to see that their proposed location will undoubtedly drain more than their fair share of Conoco reserves from the orthodox location because there is such a large drainage radius associated with these wells.

Q. Let me ask you to turn to Exhibit No. 9. Would you identify and describe that exhibit?

A. Yes. This is a plot of pressure history comparison between the Conoco-operated Preston Federal 1 and the Yates-Mojave No. 1. The Preston Federal No. 1 had an initial pressure of approximately 2800 PSI, while the Mojave No. 1 shows an initial pressure of 2100 PSI.

Now, my conclusion is the only way that the initial pressures could be so significantly

different is by pressure depletion from the Preston Federal No. 1 on the Mojave No. 1. And this is graphically illustrated in Exhibit No. 2 where we have drawn the theoretical drainage radius from my calculation and placed it on the map.

Q. Looking at Exhibit 9 you have the pressure data over time on the Preston Federal?

A. Uh-huh.

Q. That is a reported pressure that is measured in the well?

A. That's right. Static bottomhole pressure.

Q. This is bottom reservoir pressure?

A. Reservoir pressure adjusted to a common datum.

Q. Is that reliable information from which to determine reservoir pressure?

A. Yes, sir.

Q. And Preston Federal 1 produces over 20-some years' period?

A. Right.

Q. The Mojave 1 is drilled, tested, and a pressure measurement is taken on that well?

A. Right.

Q. And what did you find?

A. I found that the initial pressure from the Mojave was significantly less than the initial pressure from the Preston Federal indicating to me that pressure depletion had occurred because of the large drainage area.

Q. Was there any other well within this area of the pool that can explain the pressure depletion of the reservoir other than the Preston Federal 1 well?

A. No.

Q. You've then taken that information and you've scribed a circle on one of Mr. Hardie's displays to give a visual reference, Exhibit No. 2?

A. That's correct.

Q. As to allays the theoretical area that would have been affected by the Preston 1 well?

A. That's correct.

Q. Have you developed a recommendation to the Examiner for a penalty to be imposed upon the Yates well in order to balance the equities between the parties?

A. Yes, we have. We've determined what we believe is a fair and meaningful penalty.

Q. All right. Before we talk about your penalty, let's talk about Yates' proposed penalty.

A. Uh-huh.

Q. It had several components. The first two of which were the distance encroachment factors, north, south, east, west?

A. That's correct.

Q. In addition, Mr. McWhorter had factored in the excess theoretical drainage area in the double circle --

A. That's correct.

Q. -- business. Okay. Then he had averaged all of those and come up with his 21 percent penalty. And then he proposed to apply that to the top gas producing allowable of 14 million?

A. Correct.

Q. All right. Where in that analysis do you and he have differences?

A. The difference would be in the drainage radius of the wells. He states that it would drain 320 acres, and I believe without a doubt it would drain a much larger area.

Q. In terms of your proposed penalty, have

you factored in a component to the penalty that equates to what Mr. McWhorter used when he had the double circle?

A. Have we specifically factored in a drainage penalty?

Q. Yes.

A. No, sir. The drainage would be factored in based on footage encroachment.

Q. All right. So you have used that parameter to balance the drainage question?

A. Right.

Q. What else have you done?

A. We added an additional penalty based on the fact that 50 percent of the Yates proration unit contains unproductive pay.

Q. How did you make that determination?

A. By looking at the isopach maps that were available to us and seeing that, where the position of the zero line is, that approximately 50 percent of that 320 proration unit contains nonproductive pay.

Q. We'll go through the calculation in a minute. Do you have a recommendation to the Examiner as to what to calculate that penalty against?

A. Yes, sir.

Q. What is it?

A. Since even the best of wells out there do not come anywhere close to the 14 million a day allowable, it seems fair and just to apply that to a 24-hour official potential test to protect Conoco rights against drainage.

Q. Why is that better than Mr. McWhorter's proposed penalty?

A. I believe it presents a more meaningful and fair penalty.

Q. Let's go now to Exhibit 10 and have you take us through your calculation and the penalty formula that you're recommending.

A. Steps 1, 2, and 3 are identical to the penalty presented by Yates Petroleum. We determined two encroachment factors: One towards the south in which the encroachment is 300 foot, or 45 percent penalty. And the second encroachment is to the east where the encroachment is 100 feet, or 15 percent penalty.

Conoco is content to use the simple average to arrive at the overall encroachment penalty, which would be 30 percent.

Q. All right. If you stop there, under

this methodology, then by averaging these factors, a well could move to the corner of its spacing unit and still not reach a maximum 100 percent penalty?

A. That's correct.

Q. The arithmetics of doing this averaging will not penalize the well in direct relationship to its distance to that line?

A. Right. Correct.

Q. You get to average both dimensions?

A. That is correct.

Q. What then did you do?

A. Then we applied an additional 50 percent penalty based on the fact that 50 percent of the 320-acre proration unit contains nonproductive pay.

We feel that these two factors, the nonproductive pay penalty and the encroachment factor, are completely unique and unrelated. Therefore, a simple average would not work because it dilutes the penalty. We feel they should be compounded.

Q. If you took the productive acreage portion of the calculation and averaged that rather than compounded it, what would the penalty

be?

A. I believe it comes out to be about 40 percent or slightly less, 37 percent, if you average all three.

Q. And your recommendation then is not to average that last factor but to compound it?

A. That's right.

Q. And to finish the calculation then, it's a 65 percent penalty, which you have translated into a .35 producing allowable factor for a well with a full acreage?

A. That's correct. After the encroachment factor, you will have essentially a 70 percent allowable. If you multiply that by 50 percent for the nonproductive pay, it results in a 35 percent penalty factor or 65 percent penalty.

Q. Will a penalty of this range afford Conoco an opportunity and the time necessary to go back into the Preston 4, recomplete that well, and attempt to recover the gas reserves underlying your spacing unit before Yates gets those gas reserves?

A. If the penalty is applied to an official potential test, yes, it will.

Q. Will a penalty of that range, applied

as you propose, afford Conoco an opportunity to drill and complete its well in the east half of 34 before Yates gets those reserves?

A. Yes, sir, it will.

MR. KELLAHIN: That concludes my examination of this witness. Exhibit Nos. 6 through 10.

EXAMINER CATANACH: Exhibits 6 through 10 will be admitted as evidence.

EXAMINATION

BY MR. CARROLL:

Q. Would you pronounce your name for me one more time?

A. Mark Majcher.

Q. Majcher?

A. Rhymes with "nature."

Q. That's better when you give me a rhyming sound. I might make it through this examination.

All right. Mr. Majcher, let's start in a general vein, and would you share with me what your concept is of the purpose of this penalty? Is it to try to equalize, when assessed, the producing capabilities of producing wells, or is it to be in the nature of a penalty which bears

with it such consequences that it will prevent like actions happening in the future?

In other words, the penalty is, like I described in the second case, is much like what we use in criminal law; it has some sort of prohibitive effect?

A. No, I don't believe we're trying to keep anybody from drilling a well. What we're trying to do is protect Conoco rights, and we feel this is the best formula we have to do that.

Q. In other words, at least within the definition of correlative rights that we operate under in New Mexico, is that both parties should have a right to produce what they would normally produce, everything being equal, everybody having a well down, that sort of thing?

A. Sure.

Q. Okay. Now, with respect to the two wells Yates has proposed, the orthodox location well and the unorthodox location well, let's talk generally for a moment about those two wells.

Are you aware of anything, based on any scientific evidence available to you, which says that if we drilled a well at the orthodox location and we drilled a well at the unorthodox

location that the well at the unorthodox location, with everything being the same and equal, would drain more acreage than the well at the orthodox location? Or would there --

A. But everything is not the same because the unorthodox location has moved further to the southeast encountering thicker pay and thereby draining larger volumes.

Q. Well, how much thicker pay are you saying that this location is going to encounter?

A. I don't have an exact number on that, but it's obviously greater.

Q. Have you, in this formula that you gave us for your penalty calculation, calculated in or factored in the difference between the two pay zones as one of the factors?

A. In terms of drainage?

Q. Yes.

A. The drainage penalty is factored into the footage penalty. The footage encroachment penalty.

Q. But are any of the factors used based upon your perceived advantage of the unorthodox well having a thicker pay?

A. I think that would result in a more

aggressive penalty. But to answer your question, no.

Q. Okay. That's what I needed. All right. Now, you saw the exhibits that Mr. McWhorter prepared, and they were basically the exhibits which located the two proposed well sites, the orthodox and the unorthodox?

A. That's correct.

Q. And he then superimposed upon them two drainage circles. You're familiar with that?

A. Yes, sir.

Q. And in fact that is a very common and accepted practice for showing drainage with respect to a particular well location?

MR. KELLAHIN: Objection. I'll take issue with that. That's argumentative whether it's a customary practice to do this.

MR. CARROLL: I think it's well within his expertise.

EXAMINER CATANACH: Customary for who?

Q. (BY MR. CARROLL) Customary for petroleum engineers that practice in the field as you do.

A. Is it customary to draw 320-acre drainage radiuses around the 320-acre prorated

well?

Q. Well, let's be even more general. The custom of drawing circles, whatever you decide to draw it in, the size, but to do it in that fashion.

A. Let me clarify what you're asking. You're asking, do you draw your drainage radiuses as circles?

Q. Yes. That's the more general, and that's where I'd like to start with.

A. Without any additional data, I think it is typical to use a simple radial model to draw your radiuses, yes.

Q. All right. Now -- and in fact you've probably done it this way, haven't you, Mr. Majcher?

A. In the past?

Q. Yes.

A. Sure.

Q. Now, if you have a well that's going to be draining an area -- and what I think your testimony is, that these wells drain extremely large areas -- you have no disagreement with the statement that wells in this area if they're gas wells drain much more than a 320-acre proration

unit; that they have that capacity?

A. That's right.

Q. And in fact you think that's what's happened out there, especially based upon your comparisons of the Mojave and the Preston 1 well?

A. That's correct.

Q. Now, if the two wells, the unorthodox well we're proposing and the orthodox well also in Section 34, if the pay is relatively similar and you have -- this is basically hypothetical, but we're assuming that all of those characteristics are the same -- the well at the orthodox location would in fact drain under your analysis -- would it drain gas outside of its 320-acre proration unit?

A. From the orthodox location?

Q. From the orthodox location.

A. Yes, it would, not as much as an unorthodox location.

Q. But it would drain oil and -- excuse me, gas from the east half of Section 34, the nonstandard Section 35, and the nonstandard Section 34?

A. Sure.

Q. Now, if the unorthodox well were

drilled and it was for purposes of this hypothetical, basically the same kind of well, same capabilities, it likewise would drain area larger than the ascribed 320-acre proration unit?

A. It would drain -- yes, it would drain larger than 320, but it would drain more than the orthodox location.

Q. That's right. And the difference when we -- and I'm assuming you're using the word "more" as the difference and that's my intent -- the difference between the two would be just as this example in Exhibit 5 that Mr. McWhorter did, when you draw the overlapping circles, whether you draw it on a 320-acre basis or 570-acre basis, as long as you draw the circle the same way for both wells, unorthodox and orthodox, you're going to get a relationship.

The unorthodox location well is going to be a little bit farther to the south here and to the east and west than the orthodox; is that correct?

A. That's right.

Q. And the difference in drainage is going to be that area between those two circles?

A. That is correct.

Q. That's the "more" that we're talking about?

A. That is correct.

Q. And it's this "more" that really Yates is getting by moving from orthodox to unorthodox?

A. Sure.

Q. Okay. So that is in effect, at least without putting a number on it and quantifying it, but at least a conceptual idea, that's what we're looking at as the unfair advantage Yates is gaining?

A. One of the unfair advantages.

Q. What other unfair advantages do you have in mind, Mr. Majcher?

A. Well, as we stated in the penalty, they should be assessed a penalty for having 50 percent nonproductive pay in the proration unit.

Q. Well, Mr. Majcher, is there any -- do you know of a single proration unit in the state of New Mexico that is assessed a penalty based on the fact that it does not have productive acreage within its assigned proration unit?

A. I have seen a penalty like that. I cannot cite the case, but I have seen the penalty somewhere in New Mexico based on that.

Q. Do you know what the circumstances were?

A. I believe it was a similar penalty based on nonproductive pay.

Q. Well, with respect to the field, was it an associated gas pool, Mr. Majcher?

A. I do not know that, no, sir.

Q. In fact, you recited a penalty in No. 4 under your exhibit No. 10. It says, "Percent penalty obtained from Yates map exhibit in case 1108." Now, that particular case dealt with a Morrow well in a gas pool rather than an associated gas pool; is that correct?

A. The only thing we used from that case was their map from the Cisco dolomite, which we we felt we'd use to avoid controversary.

Q. Are you saying that is where you drew -- the geologists got these lines of elevation for the dolomite?

A. No. Our geologist has his own maps.

Q. I'm sorry. I didn't understand what you said you obtained from that case.

A. You're asking why we used the Yates map exhibit to determine our 50 percent penalty?

Q. Well, I'm wondering what you obtained

from the exhibit. Did you obtain some contour lines for geological purposes, or did you get a penalty?

A. We obtained the contour lines, which we assessed the penalty on.

Q. So really this penalty that you're trying to -- didn't find its basis in this case; it's just some contour lines which you used to find its basis in that case?

A. We used the map to assess the nonproductive acreage, yes.

Q. Was a penalty assessed in that case?

A. No, sir, not to my knowledge.

Q. So there was no penalty assessed on the basis of nonproductive acreage in that case?

A. No, sir. All we did was use their map to determine our own penalty for this particular case.

Q. When you say under No. 4, "percent of proration without productive pay," how do you define productive, Mr. Majcher?

A. Well, where the dolomite pinches out to the zero contour line. Both the geologists have stated that beyond that you have tight seely limestone that's nonproductive. And that's how I

define nonproductive.

Q. Well, hasn't in the past Conoco actually perforated the limestone lying above the dolomite in this North Dagger Draw Field?

A. Not as a general practice, no.

Q. But they have done it?

A. It has been done once or twice in the past, yes, sir.

Q. So at least Conoco has in the past defined productive as something beyond the dolomite?

A. I wouldn't necessarily say that since we perf'd the limestone that it was productive. We had gas shows from the limestone. It's extremely tight and in my opinion nonproductive.

Q. But still Conoco as a business decision decided to open that up to allow gas to be produced; isn't that correct?

A. In one or two particular cases, yes, but it was most likely a blanket job where we accessed the top of the dolomite as well.

Q. Can you -- or do you have any information at your hand to say absolutely that there is no gas to be found outside of the south half or the bottom half of this west half of

Section 34?

A. I can only say that I know from my experience that we don't routinely perforate the limestone on purpose and that it doesn't have the porosity and vugular development that the dolomite has.

Q. But you cannot rule it out?

A. I suppose not. I wouldn't shoot it, though, or drill for it.

Q. In looking at this the way that you have applied this productive, you've come in and made the determination that 50 percent of this west half of Section 34 is productive; is that correct?

A. That's correct.

Q. Why didn't you apply the 50 percent penalty to the 14 million that Mr. Kellahin and Mr. McWhorter described? Because if the well were productive over 320, under the current field rules they could produce 14 million.

Why shouldn't you just take the 50 off of that, get 7 million, and then apply the 23 or 30 percent penalty? What's wrong with that methodology?

A. Because I do not feel that it provides

a meaningful and just penalty.

Q. In other words, a meaningful and just penalty is not one to equalize the rights of production but to penalize Yates for doing what it seeks to do?

A. Well, if we worked a penalty that way, it's my opinion that the well would never be penalized because those wells in that area only produce 1.3 to 1.8 million cubic feet of gas a day.

Q. Mr. Majcher, is there a rule that you ascribe to that position that for a penalty to be meaningful it has to hurt the well?

A. That is the general definition of a penalty.

Q. I thought we ascribed to the fact that a penalty should be used to allow wells to produce equally, take away the advantage that one would have by moving to another well.

MR. KELLAHIN: I'm going to object to this, Mr. Examiner. I've been patient, but I don't think the cross-examination is very meaningful at this point. It's leading us nowhere.

MR. STOVALL: I think, well, with

regard to that specific question, I think it was asked and answered early on. I don't know how helpful it's going to be.

At this point I guess I would advise, Mr. Examiner, that we probably could get a little more focused on here to get you some useful information to make a decision. I think it's pretty clear that there's a difference in philosophy between Yates and Conoco.

And I think unless the Examiner expresses some concern about not understanding that difference, I think we need to -- I think we've got that information.

Q. (BY MR. CARROLL) Mr. Majcher, let me then ask this question. Are you aware of a single well in the North or South Dagger Draw Field that have been assessed a penalty based on their absolute open flow?

A. In Dagger Draw, no, sir.

Q. You were present and heard Mr. McWhorter's statements concerning how he figured the allowable for a well based upon his interpretation of the pool rules?

A. Yes.

Q. Did you find anything wrong with the

way in which Mr. McWhorter described the rules and their application?

A. Are you asking if I understand the pool rules?

Q. What I'm asking is, as you heard what Mr. McWhorter stated, as far as his characterization of the rules --

MR. STOVALL: Let me help you with this, Mr. Carroll. Would you agree with the method by which Mr. McWhorter calculated the allowable under the rules --

THE WITNESS: Under the rules?

MR. STOVALL: -- for a 320-acre spacing unit?

THE WITNESS: Yes, I would agree.

MR. STOVALL: Would you come up with the roughly 14 million number that he did?

THE WITNESS: Yes, sir.

MR. STOVALL: Is that what you're trying to get to, Mr. Carroll?

MR. CARROLL: That was, Mr. Stovall.

MR. STOVALL: While Mr. Carroll is -- let me go ahead and just ask the same question I asked your geologist. Number one --

MR. CARROLL: Could I take just a

minute? I need to get something clarified that I'm having trouble understanding. Would you mind me stepping out and getting that clarified?

MR. STOVALL: If you don't mind, I'd like to go ahead and ask the questions.

MR. CARROLL: I'd like for you to too.

EXAMINATION

BY MR. STOVALL:

Q. First question is given that the BLM has said you can't drill in an orthodox location, what would be your recommendation to your company?

A. I would place the well in an unorthodox surface location and directionally drill the well to an orthodox bottomhole location.

Q. Is that also because you can predict a downhole motor better than you can predict us?

A. Well.

Q. You don't have to answer that question.

A. A discussion with our drilling department indicates that it would not be a difficult task and would not be an expensive task.

Q. Given that you could do that, would the -- I mean, you would not apply then a productive

acreage penalty of any sort into that situation; right? You'd be able to produce whatever the well was capable of essentially, assuming there was no top allowable wells out there; correct?

A. I assume so, yes.

Q. I guess the question I have is why, when you move a portion of the distance, does all of a sudden the productive acreage have something to do with -- if the wells were required to be closer to the center of a tract, I could see that. But when you can already get to 660 --

A. Well, I'm not sure that if this had been drilled originally as an orthodox location if this issue would have come to light.

Q. I don't think it would have because there would have never been a hearing.

A. Exactly. That's the reasoning why I would say that no 50 percent penalty would be assessed.

Q. I mean, there's implicit in the Conoco position that perhaps allowables should be based upon productive acreage. And if an entire proration unit is not productive, then the allowable for that in a prorated pool ought to be reduced by some --

A. Well, let me go back on what I said earlier. Thinking about it now, I would assign a 50 percent penalty because, since the fairway pinches out, any drainage would be towards Conoco acreage.

Q. What legal method would you use to assign a penalty to an orthodox location?

A. I don't know that. But --

Q. In other words, you'd have to use a productive acreage allowable compilation.

A. Exactly.

MR. STOVALL: Okay. I got all the answers I need.

MR. CARROLL: Just a couple more questions, Mr. Majcher.

FURTHER EXAMINATION

BY MR. CARROLL:

Q. If we had wells drilled on all of these sections, 34, 35, the east of 34, and as each of these wells began to produce, their area of influence gradually works outward and away from the wellbore; is that correct?

A. That's correct.

Q. And if and in fact let's say we have two wells that go on line at the same time, and

at some point in time their areas of drainage in effect are going to collide, aren't they?

A. Somewhere, yes.

Q. They're not going to overlap; they actually collide and there will become an area of no flow?

A. That's correct.

Q. Okay. Now, let us suppose that we have two wells --

A. That is supposing that everything is equal.

Q. But even if there are factors that are unequal, all that does is affect the position --

A. The position.

Q. -- the position of the no flow?

A. That's corrrect.

Q. The concept of the barrier being created at some time, that's pretty well accepted, though, within the field of petroleum engineering?

A. Sure.

Q. Okay. Now, let us suppose we have a well that goes on five years before this other well. It's fairly axiomatic that this barrier or no flow area is going to be closer to the newer

well than the older well because the older well has produced longer and has had a longer time to affect areas; is that correct?

A. Uh-huh.

Q. And it's your testimony that this well in Section 35, the Preston 1, already has, in effect, affected considerable distance, hasn't it?

A. Yes, it has.

Q. And since we have two wells already producing, the Mojave 1 and the Preston 1, and the Mojave is comparable to the Preston 1 -- and you would probably predict the same kind of life for it that's been experienced in this Preston, wouldn't you?

A. Uh-huh.

Q. The fact that we now, let's say we drill at this point in time, some 20 years after the Preston well at the unorthodox location, this area of no flow is not going to be equidistance between the Diamond AK well and the Preston well or equidistance between the Diamond and the Mojave, but it's going to be different -- it will be closer to the Diamond than any of these wells, but it will be based on the actual drainage

that's gone on before?

A. That is correct.

Q. Did you factor in and take into account that difference in time and the effect that it will have on the drainage in coming up with your calculation?

MR. KELLAHIN: Objection to the question. That has no relevance or bearing to your decision. Correlative rights is the opportunity to protect yourself.

And we don't adjust acreage factors or penalties based upon the fact that one well was there in point of time before the other. This simply makes no sense and adds nothing to the discussion.

MR. CARROLL: It does find out what he cranked in and what he didn't crank in. And that's all I asked him.

MR. STOVALL: I think he can say yes or no. I don't know how much further you need to go with it. I guess you can say yes or no: Did you talk about the existing -- think about the existing area of influence and drainage from existing wells?

THE WITNESS: Again the only drainage

factor in our penalty is the footage encroachment factor.

Q. (BY MR. CARROLL) So there were no other variables then cranked into your analysis?

A. We feel that the footage encroachment factor factors in any potential drainage for the penalty formula.

MR. CARROLL: I have no other questions.

EXAMINER CATANACH: Tom, anything else?

MR. KELLAHIN: No, sir.

EXAMINER CATANACH: Bob?

MR. STOVALL: No. Do you?

EXAMINER CATANACH: I don't think so. No, I don't.

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

Mr. Examiner, you've heard hundreds of these cases. I don't think I can add anything to the discussion that is going to help you decide what to do. I propose to take the case under advisement, and I'll waive closing statement.

MR. CARROLL: I will do likewise.

EXAMINER CATANACH: Okay. There being

nothing further, Case 10519 will be taken under advisement, and this hearing is adjourned.

[And the proceedings were concluded.]

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10519, heard by me on August 20 1992.

David R. Catanach, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

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

I, Debbie Vestal, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

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

WITNESS MY HAND AND SEAL AUGUST 28, 1992.

Debbie Vestal

DEBBIE VESTAL, RPR
NEW MEXICO CSR NO. 3

NEW MEXICO OIL CONSERVATION COMMISSION
EXAMINER HEARING
SANTA FE, NEW MEXICO
AUGUST 20, 1992 -- 8:15 A.M.

NAME	REPRESENTING	LOCATION
KEITH LOGAN	BTA	MIDLAND
[illegible]	Yates Pet Corp	Artesia
Maurice Trimmer	Byram Co.	SF
Joe Fitzgerald	Nearburg	Midland
[illegible]	Kellahin & Kellahin	SANTA FE
Jerry Hoover	Conoco	Midland TX
William Hardie	Conoco	Midland TX
MARK MAJCHER	Conoco	MIDLAND TX
BRIAN ARY	Conoco	MIDLAND TX
MIKE BURCH	YATES PETRO. CORP.	ARTESIA, N.M.
Paul Cooter	McKenzie Methane	Santa Fe
James Bruce	Hinkle Law Firm	Santa Fe
[illegible]	Losee Law firm	Artesia
Hinson McWhorter	Yates Petroleum	Artesia
William [illegible]	[illegible]	Santa Fe

NEW MEXICO OIL CONSERVATION COMMISSION
EXAMINER HEARING
SANTA FE, NEW MEXICO
AUGUST 20, 1992 -- 8:15 A.M.

NAME	REPRESENTING	LOCATION
Ernie Busch	NMOCD	Aztec