NEW MEXICO OIL CONSERVATION COMMISSION
EXAMINER HEARING
SANTA FE, NEW MEXICO
SEPTEMBER 17, 1992 -- 8:15 A.M.

NAME	REPRESENTING	LOCATION
Brent May	Yates	Artesia
		SF
		Santa Fe
DAVE BONEAU	YATES PETROLEUM	ARTESIA
		Santa Fe
	Yates Pet. Corp	Artesia
	Yates Pet. Corp	Artesia
PAUL C. THOMPSON	WALSH ENGINEERING	FARMINGTON.
Jerry Hoover	Conoco	Midland TX
Brian Huzzey	Chevron USA	Midland TX
Alan W. Bohling	Chevron USA	Midland, TX
Dave Rittersbacher	"	"
Paul Cooter	Roday Law Firm	Santa Fe
GARY HOUSELEIS	SOUTHWEST ROYALTIES INC	MIDLAND, TX
James Bruce	Hinkle Law Firm	Santa Fe

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NAME	REPRESENTING	LOCATION
F.D. Schock	Southwest Royalties	Midland Tx
Richard Masterson	" "	" "
David R Vandiver	Fisk + Vandiver	Artesia, N M
Jack Lowder	ARCO	Midland, TX
Jay T. Altum	ARCO	Midland, Tx
V. Ray Ryle	ARCO	Midland, TX
Jon Tate	Southwest Royalties	" "
Dick Prentice	ARCO	" "
Robert Lee	Chi Energy	" "
Mark Edwards	Greenhill Pet.	Houston, TX
Chuck Bupp	"	"
Kathleen Volk	Hallwood Pet. Inc.	Denver, CO
Kevin E. O'Connell	Hallwood Pet Inc	Denver, CO
Robert R. Hicks	Independent Oper.	Dallas, TX
John Clayton	Meridian Oil	Farmington, NM

ERIC D. CARLSON } MARATHON OIL COMPANY - MIDLAND TX
CRAIG T. KENT

NEW MEXICO OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

CASE NO. 10544

IN THE MATTER OF:

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

BEFORE:

DAVID R. CATANACH

Hearing Examiner

September 18, 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 YATES PETROLEUM CORPORATION:

FISK & VANDIVER
Seventh and Mahone #E
Artesia, New Mexico 88210
BY: **DAVID R. VANDIVER, ESQ.**

FOR CHEVRON USA, INC.:

CAMPBELL, CARR, BERGE & SHERIDAN, P.A.
Post Office Box 2208
Santa Fe, New Mexico 87504-2208
BY: **WILLIAM F. CARR, ESQ.**

FOR MARATHON OIL COMPANY:

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

I N D E X

WITNESSES FOR MARATHON OIL COMPANY:

E X H I B I T S

EXAMINER CATANACH: Call the hearing to order this morning. At this time we'll call Case 10544.

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

EXAMINER CATANACH: Are there appearances in this case?

MR. VANDIVER: Mr. Examiner, my name is David Vandiver, of the Artesia law firm of Fisk & Vandiver, appearing on behalf of Yates Petroleum Corporation. And I have three witnesses to be sworn.

EXAMINER CATANACH: Other appearances?

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm, Campbell, Carr, Berge & Sheridan. I represent Chevron USA, Inc. And I have two witnesses.

EXAMINER CATANACH: Other appearances?

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

EXAMINER CATANACH: Any other

appearances?

Can I get all the witnesses to stand and be sworn at this time?

[The witnesses were duly sworn.]

ROBERT BULLOCK

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

EXAMINATION

BY MR. VANDIVER:

Q. Please state your name and your occupation and by whom you're employed.

A. My name is Robert Bullock. I'm employed by Yates Petroleum Corporation as a petroleum landman in Artesia, New Mexico.

Q. Mr. Bullock, on previous occasions have you testified before the Oil Conservation Division in your capacity as a petroleum landman and had your qualifications as such accepted, and are your qualifications a matter of record?

A. Yes, they are.

Q. And are you familiar with the title to the land within the spacing unit for Yates' proposed well in this case and the surrounding acreage?

A. Yes.

MR. VANDIVER: Mr. Examiner, I tender Mr. Bullock as an expert petroleum landman.

EXAMINER CATANACH: Mr. Bullock is so qualified.

Q. Mr. Bullock, just briefly, what's the purpose of Yates' application in this case?

A. Yates is making application for an unorthodox gas well location located in Township 22 South, Range 23 East, Section 23. The footage will be 660 from the north line, 860 from the west line in Section 23. That's in Eddy County, New Mexico.

Q. All right, sir. If I could ask you to refer to Yates Exhibit 1 in this case and ask you to identify that, please, sir.

A. This is a land plat showing the proposed location in Section 23. And it shows the offsetting leasehold operators in Sections 14, 15, and 22.

Q. And is the proposed location as shown in the northwest quarter of Section 23?

A. That's correct.

Q. Is this land located within the Indian Basin-Upper Penn Gas Pool?

A. Yes, it is.

Q. And that's subject to special rules and regulations of the Division?

A. That's correct.

Q. What is the standard well location under the Indian Basin Gas Pool?

A. Each well should be located no closer than 1650 feet from the outer boundary of a proration unit nor closer than 330 feet to a quarter-quarter section.

Q. And what's the acreage to be dedicated if this well is completed in the Upper Penn?

A. All of Section 23.

Q. Is Yates also going to test the Morrow Formation?

A. Yes, they are.

Q. And what would be the acreage to be dedicated if it's completed as a Morrow well?

A. All of Section 23.

Q. I'm sorry. This land is not within special pool rules with respect to the Morrow Formation, is it?

A. That's right. We will be on the north half, 320.

Q. Right. And so what would be the standard setbacks for a Morrow well?

A. Be 1980 feet from the in boundary and 660 from the side boundary.

Q. Is your proposed location at this time the original location that Yates proposed?

A. We originally proposed a 660 north and west location. But for archeological reasons we had to set it back to an 860 location.

Q. And your application for permit to drill has been approved by the Bureau of Land Management?

A. Yes.

Q. This is federal acreage?

A. That's correct.

Q. And the acreage shown on this map in Sections 14, 15, and 22 is also federal acreage?

A. That's correct.

Q. Who are the operators of the tracts shown on this plat?

A. Chevron and Marathon are the only leasehold operators offsetting our proposed location.

Q. If I could ask you to refer to Yates Exhibits 2 and 3 and ask you to describe what those are.

A. That's an Affidavit of Mailing to the

offset leasehold operators indicating our desire to build the unorthodox location. And the Exhibit 3 is return mailing receipts from the certified mailing.

Q. Is the Indian Basin-Upper Penn Gas Pool a prorated pool?

A. Yes, it is.

Q. And what's the allowable?

A. We understand it's five-and-a-quarter to five-and-a-half million per day. It's my understanding.

Q. Okay. Are there other unorthodox locations in the area of the Indian Basin-Upper Penn Gas Pool?

A. Yes, there are.

Q. If I could ask you to refer to Exhibits 4, 5, and 6 and ask you to identify those, please.

A. Exhibit 4 is an order of the Commission on Case 4562 for an application of Texas Oil & Gas Corporation for an unorthodox gas well location. And a subsequent order, R-4172, which provided for a 45 percent penalty for standard allowable of the pool.

Q. And where is the well to which that

order is subject?

A. That well is in Section 22 of 22 South, 23 East. And the footage is 990 from the north, 990 from the east -- excuse me, from the west.

Q. And is that well shown on your plat, Exhibit 1?

A. Yes, it is.

Q. It's the well in the northwest quarter of Section 22?

A. That's correct.

Q. All right. What is Exhibit 5?

A. Exhibit 5 is an order of the Division on Case 10316, application of Sendero Petroleum, Inc., for an unorthodox gas well location in Section 24 of Township 22 South, Range 23 East. And this Order R-9526 provided for a 30 percent penalty of the allowable.

Q. What's the location of that well?

A. That well is located 660 from the north and west of Section 24.

Q. All right. And identify Exhibit 6, please.

A. Exhibit 6 is an order of the Division on Case No. 10412, application of MW Petroleum Corporation and Apache Corporation to amend

Division Order R-4887 whereby they directionally drill from a surface location to an orthodox location in Section 12 of 22 South, 23 East.

And it provided originally for a 51 percent penalty, which was subsequently reduced to a 39 percent penalty.

Q. Mr. Bullock, there are other wells in the pool that are unorthodox as well in addition to these examples, are there not?

A. Yes, there are. We just picked these examples for brevity.

Q. Were exhibits -- let me ask you this. What is the term of federal lease NM 69325 covering Section 23?

A. This lease expires 11/1 of 92.

Q. And so you propose to commence drilling operations on Section 23 prior to the expiration of primary term?

A. Yes, that's what we'd like to do.

Q. So you're seeking an order in this case prior to that day?

A. That's correct.

Q. Were Exhibits 1, 2, and 3 prepared by you or under your direction?

A. Yes, they were.

MR. VANDIVER: Mr. Examiner, I'd move admission of Exhibits 1, 2, and 3 and ask you to take administrative notice of Exhibits 4, 5, and 6.

EXAMINER CATANACH: Exhibits 1 -- Exhibits 1, 2, and 3 will be admitted as evidence, and we will take administrative notice of Exhibits 4, 5, and 6.

MR. VANDIVER: That concludes my direct examination of Mr. Bullock.

EXAMINER CATANACH: Cross-examination, Mr. Kellahin?

MR. KELLAHIN: No questions.

EXAMINER CATANACH: Mr. Carr?

EXAMINER CATANACH: No questions.

EXAMINER CATANACH: I have no questions. The witness may be excused.

MR. VANDIVER: At this time, Mr. Examiner, I'll call Mr. Brent May to testify as to the -- as my geological witness.

BRENT MAY

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

EXAMINATION

BY MR. VANDIVER:

Q. Please state your name, your occupation, and by whom you're employed.

A. My name is Brent May. I'm a petroleum geologist with Yates Petroleum in Artesia.

Q. And, Mr. May, on prior occasions you have testified before the Oil Conservation Division in your capacity as a petroleum geologist and had your qualifications as such accepted and made a matter of record?

A. Yes, I have.

Q. Have you made a study of the geological characteristics of the area of Yates' proposed well in this case?

A. Yes, I have.

Q. And have you prepared certain exhibits to illustrate your testimony this morning?

A. Yes, I have.

Q. And have you formed certain opinions as to the nature of the geology in the area of Yates' proposed well?

A. I have.

MR. VANDIVER: Mr. Examiner, I tender Mr. May as an expert petroleum geologist.

EXAMINER CATANACH: Mr. May is so qualified.

Q. Mr. May, what is the primary objective that Yates seeks to test in the Diane ALQ Federal No. 1 well?

A. Our primary objective is to test the dolomite of the Upper Penn, or what I call the Canyon. The secondary objective would be the Morrow sands. And these sands are thought to be fluvial deltaic deposits.

Q. Mr. May, if I could ask you to refer to what's been marked as Yates Exhibit 7 and ask you to identify that, please, sir.

A. This is a cross-section, A-A prime. It's a northwest-southeast stratigraphic cross-section which shows the relationship of the Canyon, what I call the Canyon, or Upper Penn dolomite to the Canyon limestone.

The location plat is in the lower right-hand corner along with the legend. This basically shows the Canyon dolomite as colored in blue and the limestone as uncolored. It shows the location of the Diane ALQ Federal No. 1. And it shows that it's located near the edge of the dolomite, but I believe we should have a sufficient amount of reservoir to produce a commercially successful well.

Q. What are the other wells shown on this cross-section?

A. On the far left is the Chevron Helbing Federal No. 1; in the middle, the TXO Lowe Federal No. 1; and on the far right, the Adobe Ralph Lowe Estate No. 1.

Q. In the last two wells no dolomite was encountered?

A. That's correct, just the limestone. Only the Chevron well shown on this cross-section encountered the dolomite.

Q. Anything further with regard to that exhibit?

A. No. That's all.

Q. Now, if you could refer to Yates Exhibit 8 and identify that, please, sir.

A. This is a structure map with the top of the Upper Penn carbonate. It has a datum. Shows a structural dip to the southeast. Proposed location should be up-dip of two wells in Section 13, which are Upper Penn producers, and just down-dip of an Upper Penn producer in 14.

And I might state that the one well in 13 that's shown as an oil well with a red dot, this is a computer-generated map, and the data we

get is purchased from PI. For some reason they spotted this well as an oil well. I checked at the Artesia Office OCD a few days ago, and their records still show it to be an Upper Penn gas well.

So our proposed location should be up-dip of at least two producing wells in the Upper Penn.

Q. And that's the two wells in Section 13, and you're slightly down-dip from the well in the northwest quarter of Section 14?

A. That's correct.

Q. Anything further with regard to Exhibit 8?

A. No. That's all.

Q. Now, if you could turn to Yates Exhibit 9 and identify that exhibit, please.

A. This is an isopach map representing the Upper Penn dolomite. Shows its limits. The isopach map shows the total thickness of dolomite.

I might point out a few things. There's a couple of values with some question marks beside them, one in the northwest corner of Section 22 and one in Section 13. This is

because these wells did not fully penetrate the Upper Penn dolomite, so the true total thickness is unknown. And I accordingly contoured to that assuming that there was more dolomite below the TD of these wells.

Also I dashed my zero line because of the erratic nature of the dolomite edge. The dolomite generally feathers out -- near the edge feathers out into thin, tighter fingers that are difficult to predict sometimes.

Our unorthodox location, as shown on the map, should have approximately 100 feet of dolomite present at that location, which I believe should be sufficient enough for commercial productive well.

An orthodox location, which would be located 1650 from the northwest line according to my map, would only encounter approximately 25 feet of dolomite. And I believe that that dolomite would appear in the form of these thin, tighter fingers and probably would -- you could probably make a well, but in my opinion it probably would not be commercial.

I might point out there is a dry hole in the northeast corner of Section 2 that had

failed completion in the Upper Penn. It's my opinion that the well could have been productive. I believe that the well failed due to poor completion techniques. And this well -- the completion attempt was in the mid-60s, I believe.

Q. That's Section 22?

A. Yes. Section 22 in the northeast corner.

Q. Is the reservoir quality better when the dolomite is thicker?

A. Yes, I believe so. From what we have seen, our experience in the Dagger Draw Pool, which is the same lithologic unit as the Indian Basin, it's been our experience that the thicker dolomite sections give you a lot better potential to make a commercial well than when you get out near the edge.

These fingers of dolomite will produce gas, but they are generally tighter and it's hard -- a lot harder to make a commercial well from them.

Q. And you would expect to recover more of the available reserves in Section 23 if you were able to complete the well in the thicker

dolomite?

A. That's correct.

Q. Do you have an opinion as to -- or I believe you stated it, but do you have an opinion as to the advisability of drilling this well at an orthodox location under the Indian Basin-Upper Penn Gas Rules?

A. Yes. I believe, if it was drilled at an orthodox location, that it would probably be noncommercial.

Q. In your opinion, Mr. May, would Yates proposed location enable Yates to produce its just and equitable share of the gas in this pool?

A. Yes, I do.

Q. Anything further with regard to Exhibit 9?

A. No.

Q. Now, if I could refer you to Applicant's Exhibit 10 and ask you to identify that exhibit and --

A. It's cross-section B-B prime. It's basically a north-south stratigraphic cross-section with the top of the Morrow Clastics as the datum. Again, the plat map showing the location of the cross-section is in the lower

right-hand corner.

The tops of the Morrow, the Morrow Clastics and the Lower Morrow are shown along with what I call the base of the sand. I've also shown several drill stem intervals along with some perforation intervals.

On the far left is the Atlantic Refining Smith Federal No. 1 and then the proposed Yates Diane ALQ Federal No. 1 location. To the right of that is the Adobe Ralph Lowe Federal No. 1. And then on the far right is the Yates Petroleum Sacahuiste KE Federal No. 1.

You might note that in the Adobe well around approximately 9450 there was a DST performed in the Morrow. It was wet. And in the Yates well it was tested through casing through perforations, the lower Morrow was, and it was found to be wet too. The orange sands tested were found to be tight.

Q. Are there any producing Morrow wells in the area of the Yates proposed well?

A. Not that I have knowledge of. There's very few wells that even penetrated the Morrow in this area.

Q. Anything further with regard to that

exhibit?

A. No.

Q. Then if I could ask you to identify Yates Exhibit No. 11 and ask you to explain to the Examiner what information is shown on that exhibit.

A. This is a Morrow structure map with the top of the lower Morrow as the datum. It shows a general structural dip to the east. The proposed location should be up-dip of the adobe -- both the adobe well, which I just mentioned on the cross-section, which is in the southeast corner of Section 23.

And it also is -- this location, even though this well is not spotted on this map, it should be up-dip of the Yates well that also had a wet sand tested. So I believe we have the potential to be up-dip of two wet tests and the possibility of getting into productive reservoir.

I also might state that I have very little control on this map. I only had one data point. The two data points, the two wells that were shown on the cross-section, I did try to incorporate these two into the contours.

Q. All right. Now, if I could ask you to identify Exhibit 12 and describe the information shown on that exhibit.

A. This is an isolith map, which represents the sands of the Morrow Formation, and it shows the limits of the sand deposition. The isolith map is a clean sand map with a gamma ray cutoff of 50 API units or less. This map shows a sand thick trending through the area of the proposed location.

As I stated before, I had very little control in this area. And the control points are scarce. And again I tried to use some of the control points that were not on this map to help contour.

The Morrow in this whole township has not been, in our opinion, has not been thoroughly tested. And because of this the extra footage to the drill below the Upper Penn down to the Morrow would warrant a Morrow test.

Q. Mr. May, based upon your study of this area, in your opinion would Yates' proposed location been the best available location in Section 23 to enable Yates to recover its share of the hydrocarbons from the Upper Penn and the

Morrow Formation?

A. Yes, I do, in the upper Penn especially.

Q. Do you think there's any other reasonable location within the section?

A. Not for the Upper Penn, no.

Q. Were Exhibits 7 through 12 prepared by you or under your direction and supervision?

A. Yes, they were.

Q. And in your opinion would the granting of Yates' application be in the interests of conservation of oil and gas, the prevention of waste, and the protection of correlative rights?

A. Yes, I do.

MR. VANDIVER: Mr. Examiner, I would move the admission of Yates Exhibits 7 through 12 in this case.

EXAMINER CATANACH: Exhibits 7 through 12 will be admitted as evidence.

MR. VANDIVER: That concludes my direct examination of this witness.

EXAMINER CATANACH: Mr. Kellahin.

MR. KELLAHIN: Mr. Examiner, I'd like a five-minute break to talk to Mr. Carr so we can expedite the cross-examination.

EXAMINER CATANACH: Okay. Take five minutes.

[A recess was taken.]

EXAMINER CATANACH: Are we ready, Mr. Kellahin?

MR. KELLAHIN: Yes, Mr. Examiner.

EXAMINER CATANACH: Let's proceed.

MR. KELLAHIN: No questions, Mr. Examiner.

EXAMINER CATANACH: Mr. Carr.

MR. CARR: I have no questions.

MR. STOVALL: These guys are going to try to put a case on with their own witness.

EXAMINER CATANACH: For a change.

MR. STOVALL: Getting dirty looks from Kellahin. That's good.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. May, in your opinion how much dolomite do you need to make a commercial well?

A. I'd like to see at least 50 feet or more. And it's kind of what we look at in the Dagger Draw area at least for a commercial well. You can make a well with less definitely.

But of course the less you have, the

more likelihood of it being uncommercial because the thinner you get, the more likelihood you're getting into the tighter thin fingers of the dolomite and not the main body of it.

Q. The wells in this area, do you know which one encountered the least amount of dolomite?

A. Now, according to the map, it would be the well in Section 13 which encountered 30-plus. But that's one of those wells that didn't penetrate the whole section of dolomite, so I'm not sure exactly how thick it is there.

And then next behind that would be the other well I talked about in the northwest quarter of 22 with 58-plus.

Q. The well in Section 13, you said that was a gas well?

A. Yes. According to the records in the OCD Artesia office that I checked just a few days ago, their records still show that it was a gas well in the Upper Penn.

Q. Do you know anything about the producing capabilities of that well?

A. From what I understand it's not producing much, if any at all, right now. But it

did produce -- it did have a nice cum to it. It was a good well.

Q. The Texas Oil & Gas Lowe Federal No. 1, was that tested in the Canyon?

A. No, it was not because they encountered lime, and I don't think they even ran pipe, if I'm remembering right.

Q. They didn't encounter any dolomite in that well?

A. That's -- from what I can see, no, they did not.

Q. You said the dolomite feathers out into the tight fingers. Is it possible that there may be some gas production or gas that would contribute -- are there reserves in your opinion, are the gas reserves on the other side of the zero line on this side?

A. There possibly could be. That's why I dashed this line because some of these fingers, it's hard to predict exactly where that zero line is exactly going to be. A few of those fingers may extend out farther than that zero line, and of course they would hold some reserve.

I think if you encountered one of those fingers on your own, I don't think you could make

a commercial well out of it. But they would add to some of the reserves, yes.

Q. Is it your opinion that moving the proposed location south and east is too risky?

A. Yes, definitely.

Q. Do you anticipate any Morrow production in this area?

A. I think we've got a shot, yes, because at least on the maps I've shown, there's only one well that penetrated the Morrow. And I believe we should be up-dip of a few wet Morrow tests, which could give us a possibility to get some Morrow production.

In this whole township most of the wells drilled down to the Upper Penn stopped. The Morrow has not been very well tested in this whole township, and I think it deserves some more testing out here.

Q. The Canyon is actually the one that dictated the location?

A. Yes, definitely.

Q. But it just so happens that that's a better location for a Morrow test as well?

A. I think an orthodox location for a Morrow, that would be fine. It's just that our

primary objective is the Canyon or Upper Penn. And it doesn't cost that much more while you're there to go on down and explore the Morrow, so we feel like we should. The Morrow is definitely a secondary objective.

EXAMINER CATANACH: I believe that's all I have of the witness.

Anything else of this witness?

MR. VANDIVER: No, sir.

EXAMINER CATANACH: He may be excused.

MR. VANDIVER: Mr. Examiner, I'll call David Boneau to testify at this time as to his opinions regarding the reservoir.

DAVID F. BONEAU

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

EXAMINATION

BY MR. VANDIVER:

Q. Please state your name, your occupation, and by whom you're employed.

A. My name is David Francis Boneau. I work as reservoir engineering supervisor for Yates Petroleum in Artesia, New Mexico.

Q. And, Mr. Boneau, on previous occasions you've testified before the Oil Conservation

Division in your capacity as a reservoir engineer, had your qualifications as such accepted, and your qualifications are a matter of record?

A. That's correct.

Q. Have you made a study of the reservoir in the area, the Upper Penn reservoir, in the area of Yates' proposed well in this case?

A. Yes, sir.

Q. And have you formed certain opinions regarding the nature of the reservoir and Yates' proposed locations?

A. Yes, sir.

Q. And have you prepared certain exhibits to illustrate your testimony this morning?

A. Yes, sir.

MR. VANDIVER: Mr. Examiner, I'd tender Mr. Boneau as an expert reservoir engineer.

EXAMINER CATANACH: Mr. Boneau is so qualified.

Q. Mr. Boneau, could you tell us something about the wells in Sections 14, 15, and 22 with regard to their cumulative production?

A. Okay. First I think we need to -- Yates is asking that the penalty in the Upper

Penn be set at 40 percent. I don't think anyone else has mentioned that. That's what we're asking for.

Exhibit 13, which is my first exhibit, is a copy of a portion of Exhibit 9 that was presented by the geologist. It's an isopach, and it shows nine sections with Section 23 in the center.

Mr. Vandiver asked about the cumulatives for the surrounding wells. And my memory is that the well in Section 13 HOC Federal, the Honolulu Oil Corporation well, has a cum of 8 Bcf of gas, and the other wells have cums of approximately 30 Bcf of gas.

Q. Mr. Boneau, do you have an opinion as to the reserves in Section 23 in the Upper Penn formation originally?

A. Yes, and my exhibits attempt to show those numbers. Exhibit 13 shows the proposed location 660 from the north and 680 from the west for the Yates Diane well.

Q. Is that 860 instead of 680?

A. It's 860, regardless of what I said the first time.

Q. You said 680.

A. Thank you. And we expect that well to encounter about 100 feet of dolomite. On Exhibit 13 I've also drawn a circle with a radius of 2979 feet around an orthodox location, and that would be a portion of a 640-acre drainage circle.

The following exhibits calculate how much gas is in place both in Section 23 and within a 640-acre drainage circle around an orthodox location.

Q. All right. If you would identify Exhibit 14 for the Examiner or if you'd like to talk about the exhibits in conjunction with one another, you may.

A. Exhibit 14 consists of three pages, and the function of the three pages is simply to calculate the gas that was -- the gas in place in Section 23 and also within that 640-acre drainage circle around an orthodox location.

The calculations have been done in terms of original gas in place, which means gas that was in place in the 1965 time frame when the field was discovered. The original pressure in the field was reported as 2921 PSI, about 2900 PSI. The current pressure in the field is around 1500 PSI.

So I've calculated these numbers, original gas in place. An estimate, or reasonable estimate of what's there now would be half of what's calculated. It's half gone. The pressure is half gone; the gas is half gone.

So Exhibit 14, the real answers to Exhibit 14 are at at the bottom of the first page. It says Section 23 and is underlined and, the gas in place, 3.3 Bcf. There were 3.3 Bcf within Section 23 at discovery. And my estimate of how much gas is there now would be about 1.6 Bcf.

The other answer, at the very bottom of the first page of Exhibit 14, within the 640-acre drainage area around an orthodox location, there were originally 9.5 Bcf in place. And now my estimate would be there's 4.7, half of that is approximately what's in place.

The other two pages of Exhibit 14 simply fill in some of the details of that calculation. The second page is the detailed numbers for planimetering Exhibit 13. And the third page is a guess analysis and a calculation of the gas deviation factor that is involved in the calculation.

A very important parameter in the calculation is the porosity of the dolomite. I use published things. I don't have a measurement. The published porosities in the Indian Basin are, that I've seen, are 5 to 7 percent, and I use 6. That's pretty much the story on Exhibit 14.

Q. All right. If you'll identify Yates Exhibit 15 for the Examiner and describe the information contained in that exhibit.

A. Exhibit 15 attempts to make the step from how much gas was there originally and how much gas is there now to what should Yates be allowed to produce? And this is my way of doing it, and I'm sure someone else would do it differently.

My logic was that the relatively nearby well in Section 13 has ceased production and the operators moved up-dip. So that I would expect that the Yates well would be relatively short-lived. It's not going to be a 25-year well like these other wells have been.

The well in Section 13, the HOC Federal, declined 35 percent per year over the last five years of its life. And I've taken the

idea that the Yates well could easily decline 35 percent per year. And to get various amounts of gas out of the well, you can then calculate at what rate it would have to start and how that compares to the allowable in the Indian Basin. That's the kind of logic that's involved in Exhibit 15.

So in particular I've looked at three cases, three scenarios, and they're listed at the bottom of the page. If you impose no penalty and if we're fortunate enough to get a well that will produce like this, you could produce the allowable, which is about -- which has been about 5.6 million a day. And, of course, the allowable varies as the proration is set, but that's an average of what it was in 1991.

Such a well would then recover 4.7 Bcf, which would be all the gas that is within the 640-acre circle around the orthodox location. If we were given a 33 percent penalty, the well would start at 3.8 million a day and would recover 3.2 Bcf at a 35 percent decline.

And that would be all of the gas that is now in Section 23, plus -- and the paper says -- a fourth of outside. Just a fourth of what

was originally within the circle but outside Section 23. It's actually half of what's now within the circle but outside Section 23.

And in the third case, a 65 percent penalty, the well would be allowed to start at 2 million a day. And at a 35 percent decline, it would recover 1.6 Bcf, which would be all of the gas that is now within Section 23.

So I think it follows that, in recommending a 40 percent penalty, we're thinking in terms of the 33 percent case on Exhibit 15, and that says we are recommending that we be allowed to recover some of the gas that is now outside Section 23.

Frankly, I worried a lot about recommending that to you. And my logic as to why that's right is that this pool has been set up on 640-acre spacing with the rules that we've talked about. And those rules have caused people to put their wells in the northwest quarter of the sections, so that with 640-acre drainage, they drain the south half of the top half section and the north half of the section in which they exist.

And so those rules have, to me,

legitimatized the drainage area including some of the section to the north. And that's what I'm recommending here. I think that's what Exhibit 15 shows. It shows that the Yates well, if it is short-lived -- and I expect it to be short-lived -- it's going to have to start at a pretty decent production rate to get the reserves that are still in the area around it and the reserves that were originally within Section 23.

Q. Is there anything else with regard to Exhibit 15?

A. No, sir.

Q. Mr. Boneau, you're aware of the various types of formula that are used in determining penalties on the allowable in the area of the Indian Basin-Upper Penn Pool?

A. I'm aware of penalties in southeast New Mexico, and I've looked at quite a few of these previous cases on penalties, yes, sir.

Q. And what are some of the types of formula that are used in determining penalties?

A. In general it's whatever the engineers can think of at the time, but they come down to factors involving the location of the well relative to orthodox locations, factors involving

drainage areas, relative to drainage areas at orthodox locations. And especially in this Indian Basin area, there have been formulas where productive acres have played a part, played a relatively major part. Those are the kinds that I recall.

Q. All right. Identify Exhibit 16 and describe what that is, please.

A. Exhibit 16 is a calculation of a penalty under a three-part formula that's been used in southeast New Mexico by the Commission. I have appeared in cases where I've argued against this formula. But as a starting place for what's a reasonable kind of formula, it works most of the time.

The three parts in the penalty are illustrated on Exhibit 16 and there is what I call an east-west factor, and it's the relationship of the actual location and the east-west footage, or the actual location relative to the east-west footage.

For an orthodox location, the Yates is 60, relative to the 1650. And the part of the penalty from the east-west factors works out to 0.48, a 48 percent penalty based on the east-west

factor.

The north-south factor is an exactly similar thing. In comparing the north-south, the distance from the -- north-south distance of the actual location from the edge of the section related to the north-south distance of the orthodox location from the edge of the section.

And the comparison of the 660 location with the 1650 orthodox location would give a penalty factor of 60 percent.

The third factor in this --

Q. Excuse me. Do you mean a penalty factor of 60 percent or -- all right.

A. No. I mean a penalty factor of 60 percent.

Q. All right.

A. And the third factor in the three-part formula is the excess area, and it's a ratio of the area in the offset sections that lie within a 640-acre spacing, 640-acre spacing unit circle around the actual location but outside a similar circle around the orthodox location.

The figure indicates that the shaded area here contains 172 acres of excess drainage area outside Section 23, and that's 27 percent of

the 640-acre spacing unit area or normal drainage area. And that would result in a penalty factor of 27 percent.

The method then averages those three penalty factors. In this case it would yield -- the penalty factor, the average of the three, which is equal to 45 percent penalty.

My point in going through this is that a formula that has been used by the Commission comes up with 45 percent, which I contend is in line with the 40 that I'm recommending.

Q. Mr. Boneau, why no productive acres component of this formula?

A. Couple reasons for that. First of all, this is the penalty formula that I'm most familiar with, and I actually did this before I realized that the productive acres have been used at Indian Basin. But there are some differences about the Yates projects here.

I guess Yates has been up here enough that people realize how the company works. This is an expiring lease. Somebody bought it. We bought it five years ago. We should have drilled it five years ago. Obviously the gas has gone away. We've been busy with Dagger Draw and other

things.

This is, to me, this is an exploration project. This is not -- we're not a person who's had a well in this field and produced for a long time and now we're finding out that our original location was not the best and we want to move up-dip.

We're looking to hopefully extend the edge of this pool. In Dagger Draw we've been successful in drilling the north, south, and east edges of that field and extending it 40 acres at a time into productive acres.

And I look at that as -- I look at this project as an exploration project rather than just let's get a little more gas out of this section before we have to abandon our position.

Most of the cases I read where productive acres are involved are cases where a well has existed and somebody wants to move up-dip. For example, people who have, like, 400 productive acres in a section, they've had a well that's produced 5, 10 or 20 Bcf, and now they want to move to the extreme northwest corner.

An acreage factor is put into the penalty, but the acreage factor involves the 400

productive acres, and most of that has been already drained. There's maybe 40 or 80 acres that are left that are not productive, but the 400 acres goes into the penalty calculation.

Yates has, by my calculations, 145 acres, but we haven't drained anything from that. And if we put in some factor related to 145 or 650, that's unfair in the context of the other hearings because those people have produced lots of gas. We've got 145 acres that's undrained by Yates. In these other cases there may be 40 or 80 acres that's undrained by the operator, but they're getting credit for 400.

So I'm opposed to using the productive acres in the sense that it has been used, and I just don't see an advantage in trying to make some new productive acre portion of the penalty. What we've got is sufficient for what we need, and some penalty in the 40 percent range is applicable in my opinion.

Q. In your opinion, then, a 40 percent penalty in this case would be a fair and reasonable penalty and allow Yates to recover its just and equitable share of the gas in place in the Upper Penn Formation in Section 23?

A. That's my opinion, yes, sir.

Q. In your opinion it would not be fair and reasonable to base the penalty on the productive acres based upon, as you said, the history of penalty calculations in this area?

A. That's also my opinion, yes, sir.

Q. And in your opinion will the approval of Yates' application be in the interests of conservation of oil and gas, the protection of correlative rights, and prevention of waste?

A. Yes, sir.

Q. And will such a penalty in your opinion protect the correlative rights of the offset operators?

A. Yes, sir.

Q. And were Exhibits 13 through 16 prepared by you or under your direction and supervision?

A. Yes, sir.

MR. VANDIVER: Mr. Examiner, I would move the admission of Applicant's Exhibits 13 through 16 at this time.

EXAMINER CATANACH: Exhibits 13 through 16 will be admitted as evidence.

MR. VANDIVER: That concludes my direct

examination of Mr. Boneau.

EXAMINER CATANACH: Mr. Carr.

EXAMINATION

BY MR. CARR:

Q. Mr. Boneau, as you've indicated, Yates has had the lease for some time and is looking for a lease exploration; is that correct?

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

Q. Yates could have in fact drilled this well some time ago?

A. With the appropriate approvals, yes, sir.

Q. And what you have shown us on your Exhibit No. 14 is an estimate of the reserves that were originally under this acreage in the 3.3 Bcf?

A. Yes, sir.

Q. And what remains today being approximately 1.6 Bcf?

A. That's my estimate, yes, sir.

Q. Okay. If we move from that to your Exhibit No. 15, you have projected for this well a decline rate of 35 percent a year; is that right?

A. Yes, sir.

Q. Didn't you tell me that the pressure has decreased in this well approximately 50 percent from original pressures?

A. Yes.

Q. And that has occurred over how many years, 20, 30 years?

A. I think that's 25. 1965 to 1990. Those kind of times. That's 25.

Q. You've seen a 50 percent decline in 25 years, and yet you're projecting 35 percent a year from this point forward; is that right?

A. Yes, sir.

Q. Is that really a realistic -- why do you see the changes, the pressure declines so dramatically at this point in time?

A. I don't know that I understand. The well -- I took this from the nearest well that I thought had a chance of being appropriate. That was the well in Section 13. The well in Section 13, the HOC Federal No. 1, produced 8 Bcf. And starting in 1985 it declined steadily, and it now does not produce anymore.

The pressure information presented to the state on that well indicated that the bottomhole pressure is still -- I think the

numbers there were 1350 pounds -- but in the 1500 range that we're talking about. And the well died. I frankly do not understand why. And -- whatever.

I'm not sure what I'm supposed to have done. But in the time that I had, I'm not able to understand that. I still -- that is really close to where we are. And whatever mechanism is occurring there, I think, has a very good chance of occurring where we are.

Q. So what you've done, if I understand this, is you're anticipating a 35 percent decline based on what you've seen in one other well?

A. That's true, yes, sir.

Q. And you didn't look at what all the offsetting wells were doing? You just based this decline rate on data from one well?

A. Yes. It's the one offsetting well that's relevant. But what I did not do was look at other dying wells in other portions of the field and understand them. I did not do that.

Q. Now, if the well that you're proposing is drilled at the unorthodox location -- and it doesn't look like the one well that you have based your decline rate on -- we might have a

very different decline picture; is that right?

A. I think the basic answer is yes. If we've underestimated our geology, if there really is more dolomite down there or strong dolomite fingers to the southeast, and we have 2- or 300 productive acres, we could have a good well that lasted somewhat longer than what I projected.

Q. Then you would recover substantially more ultimately?

A. And we would have more on our lease to recover also, yes.

Q. If I look at your Exhibit No. 15, what it basically, if I understand your testimony, says what you're hoping to achieve is a curve similar to the middle curve where you would ultimately recover 3.2 Bcf?

A. Yes. I'm asking -- my testimony was that the top curve is not -- we cannot justify producing a well according to the top curve, but the middle curve is what I hope will happen and what I hope the Commission will let happen.

Q. And that basically would enable Yates to recover what was originally under the property?

A. That's correct.

Q. And yet no well has been drilled for probably 30 years; correct, since --

A. I'm not clear what 30 years you're talking about.

Q. Twenty to 30 years have passed since the pool was discovered?

A. And most of the development was in those early years, yes, sir.

Q. And this tract has not been developed?

A. No. No one has drilled a successful well in this tract.

Q. And Yates and its predecessors have have had that period of time within which they've had opportunity to drill a well?

A. That's correct.

Q. And what you're seeking here is now, 30 years after the pool was discovered, an opportunity to recover what was originally there?

A. Yes.

Q. And if this becomes part of the history of this pool, wouldn't then the next logical step be to go back and assign to each well, after the fact, what we believe was originally there and then say when you produce that, we shut it in?

A. That's a jump past the logic that I

intend. The --

Q. But in essence --

A. In essence that's what I'm suggesting happen. I tried to explain that I'm not asking for the gas that was originally there. I'm asking for some of the other peoples' gas. And it turns out that the numbers come out to equal the gas that was originally there.

Q. And when you're asking for other peoples' gas, you're asking for authority to drain them; isn't that right?

A. Yes, sir. That's what I'm asking for, because.

Q. Because --

A. Because they're draining somebody else.

Q. Because they drilled wells in a time frame when you did not?

A. That's true, yes, sir.

Q. I'd thought I understood your testimony to be that with this well you felt you were extending the limits of the reservoir; is that what you said, with this proposed well?

A. Well, that's the idea. No. I admit that doing it 40 acres at a time is a tough analogy in a big gas field like this.

Q. But in fact what we're doing is moving from a dry hole back toward the heart of this reservoir where this location is; isn't that right?

A. I can see where you would interpret it that way.

Q. When we talk about your Exhibit No. 16, the double-circle calculation, you've in fact been involved in hearings where Yates said if this was used again, we go to court, haven't you?

A. I think that -- we may have said if it was used in that case we would go to court, yes.

Q. One of the problems with a calculation like this is that in fact it assumes radial drainage, doesn't it?

A. That's one of the problems. There are probably others.

Q. Would you expect radial drainage to occur where you have a transition between dolomite and limestone running sort of through the center of the circle?

A. Well, I would expect that there will be very little drainage from the southeast part of the circle where there is very little dolomite.

Q. Did you consider trying to estimate the

productive acreage in 23 that could be drained by your well and comparing that to the additional drainage that could be achieved on offsetting tracts?

A. The productive acres that we believe are in Section 23 are 145. And I guess you said how does that compare to 172?

Q. Or what you would estimate would be productive off the tract because, as I look at your geological calculation, part of the 172 acres wouldn't even be productive; isn't that right? My question really is, did you do that?

A. I think you're saying that the very -- whatever direction -- southwest tip of the hatched stuff would be below the zero contour. There's a tiny bit of it that would, I think that's correct.

Q. Did you make any kind of comparison on that basis?

A. No. You could make that comparison now: 172 is bigger than 145, if that's the comparison you want.

Q. I think you indicated that you were not recommending utilization of productive acres because historically it really hasn't been used

in penalizing wells in the pool; is that what you said?

A. I said two or three things. Let me see if I can -- I said that productive acres had not been used in the penalty cases that I was familiar with in southeast New Mexico, which involved -- which mostly involved places outside the Indian Basin.

I also said that in the cases in the Indian Basin that I've read about, productive acreage was used where an operator had an old well that had produced quite a lot of gas and was now moving -- wanted to move up-dip to prevent water encroachment or whatever.

And I thought in those cases the way productive acreage was used did not apply -- I think I used the word "fairly" -- did not apply fairly to the Yates situation here, and so I would reject its use in those cases.

I frankly do not know if there are cases like the Yates cases where productive acreage was used or was not used. I simply do not remember that.

Q. Productive acreage was used in the calculation for the offsetting MW-Apache well?

A. Yes, but they had a well previous to that.

Q. That had drained a portion of their spacing unit?

A. That had drained a portion of their spacing unit.

Q. And you think that's different than having the spacing unit where there was nothing and a lot of it could be drained?

A. Yes, I think that's different.

Q. You have one that is not productive because it's been been produced; you have another that's not productive because it's never had anything there to produce, and you think that would make a difference?

A. Well, we think that there's something here to produce. We think there's 145 acres to produce, and we should be given credit for those 145 acres.

In the MW case, I don't remember the numbers, but they were similar to my example of the 400 productive acres, and they drained very many of them. And in the productive acreage calculation, they're given credit for 400 acres, when really, they've got got maybe 40, 80, or 100

left.

We've got 145 that we've never produced, and I suspect that you'd like us to use 145 in the productive acreage calculation. And I'd say we need to use 4 times that because in the MW case you use 4 times the 80 or 100 that's really undrained.

Q. As I understand your testimony, you want to now produce the 145 acres?

A. Yes, sir.

Q. And it is your testimony that what you're doing is seeking, if I understand it, is seeking the authority to do that, plus drain some production from the offsetting wells?

A. Yes, sir.

MR. CARR: That's all I have.

EXAMINER CATANACH: Mr. Kellahin.

MR. KELLAHIN: Thank you, Mr. Examiner.

EXAMINATION

BY MR. KELLAHIN:

Q. Dr. Boneau, I think I have one of your plats that shows the 145 productive acres. I think it's on Exhibit No. 3. So that I understand what you attribute the 145 productive

acres to, am I correct in recognizing that on your calculation you have taken all that acreage within Section 23 that is above the zero contour line and is that area generally in the northwest quarter of the section?

MR. STOVALL: Mr. Kellahin --

THE WITNESS: I think we're all talking about 13.

MR. STOVALL: I think you're talking 13.

MR. KELLAHIN: What did I say?

MR. STOVALL: You said 3.

MR. KELLAHIN: Oh, I'm sorry. Exhibit 13.

THE WITNESS: I think we're all looking at 13. And, if I understand your question, that's exactly right. 145 acres is the acreage more or less in the northwest portion that is above the zero contour line.

Q. (BY MR. KELLAHIN) And when we look at the second page of Exhibit 14 and look at the second column over of the first data under Section 23, it says, "Measured Area, 145"?

A. Yes.

Q. That is the number taken from Exhibit

13 and the planimetering of that area to get the 145 acres?

A. Yes. The 145 acres comes from the actions that were done to prepare 14. We measured 145 acres above the zero contour line, 80 acres above the 50, and 24 acres above the 100 contour line.

Q. Okay. Within Section 23, there are three dry hole symbols. Can you tell me which of the three wells was the first well drilled in the section?

A. I cannot tell you that. We could look it up, but I could not tell you.

Q. On the 1 Lowe Federal, which is the dry hole marker in the southeast of the northwest quarter, do you see that one?

A. The 1 -- yes.

Q. The 1 Lowe Federal, do you know how many drill stem tests were conducted on that well?

A. No, I do not.

Q. Do you know if any of the three wells shown on Exhibit 13 within Section 23 ever produced commercial gas out of the pool?

A. I think I do know that none of them

did.

Q. On Exhibit 14, the calculation of the gas in place on the exhibit shows an original bottomhole pressure of 2921 PSI?

A. Yes, sir, that's correct.

Q. You've provided for us in your oral testimony what the gas in place is for Section 23 if you used 1500 pounds pressure?

A. Yes. It's about half of that 3.3 Bcf.

Q. I believe you told me it was about 1.6 Bcf gas in place?

A. Yes, sir.

Q. What is the current reservoir pressure in the Indian Basin Reservoir?

A. I've read numbers that it's 1500, 1600 PSI, and I've looked up a few of these reported to the state that are maybe down to 1400 PSI, but in that range. I've read several places that it's in that range, and I think Marathon told us in that's range. I believe it's about 1500 but I have no actual data to --

Q. Have you seen reported data or literature in the pool that says the average bottomhole reservoir pressure now is 1350?

A. I don't know that I've seen that, but I

wouldn't deny that that could be true.

Q. The plot that shows the -- on Exhibit 15 if we're using, for sake of discussion, 1.6 Bcf of gas in place within Section 23, within that 145 productive acres, what percentage of that gas can be recovered?

A. I would think 80, 85 percent of it can be recovered. Maybe 90 if we're lucky.

Q. On Exhibit 15, when you look at the various recoveries that you have projected using various penalties, do all these projections assume production all the way down to zero reservoir pressure?

A. I think the way I would state your question is, if I'm saying that 1.6 Bcf, for example, is all the gas in Section 3, I'm saying it's all the gas in Section 3 assuming that you could get it all out, if that's the comparison you want to make.

If I'm going to actually get 1.6 or 3.2 Bcf out, I may have to drain an area that contains, you know, 10 percent more than that in order to leave some gas there.

Q. I'm just trying to understand the method used to present the information displayed

on 15. This does not assume a certain abandonment pressure in relation to recovery of gas?

A. No, it's not really that detailed. It assumes that you can get -- I had the idea that you can get the 80, 90 percent of the gas in place out. The place where assumption comes in is in the very right-hand column at the bottom when I make some generalized kind of statements as to how the gas that those decline curves represent corresponds to gas in the place in the reservoir.

Q. The other assumption, or another assumption on Exhibit 15 is that you will drill a well that is a high-capacity non-marginal well in the pool that will come in at the top allowable, the 5.5 or 5.6 million a day rate?

A. The top curve would assume that. The other curves, the middle curve and the lower curve, do assume that you hit a pretty good well, yes.

Q. All of the curves will assume a high capacity non-marginal well, and the other two curves assume the penalty applied to that producing rate?

A. You probably know more about how Indian Basin works, but that's not in line with how I understand Indian Basin works.

Q. What is your best engineering estimate of the maximum probable rate of production of a well at your location?

A. I think I need to answer that, although my answer is -- you couched it as an estimate, and it's going to be an estimate. I think we're going to get a 3 million a day well, something like that. That would be my -- not a 10 million a day well, but not a 1 million a day well is what I think.

Q. The information displayed on Exhibit 15 assumes for all of the decline curves that upon initial production, even when unpenalized, the well is going to have an immediate decline?

A. That's the way it's drawn, yes, sir.

Q. And the assumption then is that decline is at 35 percent a year?

A. Uh-huh. I'd be very happy if it would not be any steeper than that.

Q. When you look at the last entry in the bottom of the display that has the 65 percent penalty --

A. Uh-huh.

Q. -- recovers 1.6 Bcf of gas, where did the 65 percent penalty come from?

A. It comes from the relationship between 2 million a day and 5.7 million a day, which is what I took as the top allowable. And that was simply based on historic production in 1991.

Q. If your best engineering judgment is that you'll get 3 million a day well and if it were penalized at 65 percent, then you could produce 2 million a day under this analysis?

A. That's -- yeah. That's not consistent with what you said before, but that's consistent with how I understand Indian Basin works.

Q. So if it's 3 million a day well with this penalty based upon a top allowable, whether this well will produce that or not, that's where the penalty is pegged?

A. Uh-huh.

Q. Under a 65 percent penalty, then you can do 2 million a day?

A. Yes, I understand. That's my understanding, yes.

Q. And you can get 1.6 Bcf of gas under that penalty scenario?

A. Assuming it's 35 percent per year decline, that's right.

Q. Is 2 million cubic feet a gas a day a commercial well?

A. If it lasts very long, it is, yes.

MR. KELLAHIN: I have no further questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Boneau, on your Exhibit No. 15, I'm not sure I fully understand the scenario No. 2 about the 33 percent penalty. You said that that would recover 3.2 Bcf of gas, which includes all of the gas underlying Section 23, plus how much of an area outside Section 23? Or how exactly does that work -- did you make that work?

A. Well, there's been some doubt thrown on the absolute accuracy of the numbers, and they're approximate numbers with the data that we have.

My calculations say originally there was 3.3 Bcf within Section 23 and 9.5 within that circle. So there was 6.2 Bcf outside 23 but inside the circle.

Q. Inside the standard drainage circle?

A. Inside the standard drainage circle on

Exhibit 13.

Q. Okay.

A. Using the approximation that half of that gas -- that the pressure is about half gone and about half of the gas is still in place, thereby there's 1.6 Bcf within Section 23 and approximately 3.2, 3.1 within the circle outside Section 23.

And to get the -- we're back to Exhibit 15 then -- to get the second case, you would need 1.6 that's now within Section 23, plus about half of the 3.2 that's within the circle but outside Section 23.

And I wrote down one-fourth outside, and that was one-fourth of what was originally outside, one-half of what's outside now.

Q. Is it my understanding that you're estimating that the well will produce 3 million a day initially?

A. Mr. Kellahin asked for an estimate of what it would produce. Yeah, if it makes 2.5 or 3.5, surely don't call me a liar. If it makes 500, I'm a liar.

Q. That's your best estimate?

A. That's my best estimate on Friday

morning.

Q. Okay. The 35 percent decline rate that you've estimated the well to incur, you said that was based on the offset well No. 13, or the well in Section 13. You said that that was the most similar well to the one you propose to drill in terms of using that number. Why is that? Why is that well so similar in that respect?

A. By similar, I mean near death. The wells in the heart of the field produce constant rates. And then the water or the edge of the field moves in, and they decline and no longer produce.

Our well, if we drill a well there and if it makes 3 million a day, it's not going to make 3 million a day for 25 years or for 10 years or for a long period of time. It's on the edge of the reservoir, and I thought that to predict how it would behave, I should look at other wells that were on the edge of the reservoir. And the only one that fits that's near is in 13.

There are other wells to the northeast that have watered out, and some of them watered out 10 years ago that I might have had looked at to have more back up for that number. The only

one I looked at really in detail was in Section 13. And in my opinion is that probably our well will decline faster or worse than that 35 percent. That 35 percent is, to me, the best case.

That was an attempt at an answer. I don't remember even the question, but that was --

Q. How long did that well in Section 13 produce?

A. At least 20 years.

Q. Now, the 35 percent, was that an average?

A. That was an average over, like, the last five years. It produced flat for a majority of that time. And then the death mechanism hits, and it fell off at 35 percent.

Q. It's your opinion that gas reserves from Section 23 have already been drained by offset production?

A. Yes, sir. Half the gas that was under Section 23 is no longer under there. It's moved up-dip onto other adjacent sections.

EXAMINER CATANACH: I have nothing further of the witness.

MR. STOVALL: Just one question.

EXAMINATION

BY MR. STOVALL:

Q. What is the logic that you use in suggesting that an operator ought to be able to recover gas which has been drained from a tract which that operator has not sought to recover himself?

In other words, you're asking the opportunity to recover the original gas in place, presumably under the concept of protection of correlative rights; is that correct?

A. I don't think that's the concept I have.

Q. What is your concept?

A. I don't know if people like the concept I have. But the concept I have is that the up-dip wells have all been placed in the -- most all -- been placed in the northwest quarter in the north half of the sections where their goal, their attempt, is to drain the section to the north, plus most of the section they're in, but give up the south, very, very, south part of the section to the well below them. That's --

Q. In other words --

A. That's what has been happening.

Q. In other words, the effective recoveries have not been from the --

A. From the section.

Q. -- from the legal transcript?

A. From the legal transcript. They've been shifted 40 acres up basically because of the placement of the well. And so I admit that our gas has moved off and that -- we blew it. But everyone else is getting gas from 40 acres north of their section, and we should be able to reach out and grab a little of that back ourselves like everybody else has been doing. That's my concept.

Q. But they're in an orthodox location; right?

A. That's correct, yes. Most of them are in an orthodox location.

Q. The ones surrounding you are in an orthodox location?

A. A lot of them have approved unorthodox locations with penalty.

Q. Well, the fact that it's been pulled off by other -- I mean, if that's the case -- let me put it this way. If that's the case, then those wells are 640 acres away from your

location, from your orthodox location in your section; is that correct?

A. Yes.

Q. Assuming that -- the reasoning that you've just taken?

A. Yes, I think so, that's right.

Q. And so the thing that has caused -- the effect that it has caused the drainage of Section 23 is not the location of those wells, but rather the fact that Section 23 has not been protected by a well of its own; is that correct?

A. Yes, that's correct. The previous owners of 23 -- well, obviously they tried. There was some dry holes on the section, but they did not protect these. And Yates has not protected them for four-and-a-fraction years.

Q. But you're suggesting, am I correct, that the penalty should be reduced because -- from any sort of standard measurement penalty -- because the gas has been drained so you ought to be able to get it back? Is that kind of where you're coming from?

A. Yes. I think I'm coming from -- to me the standard is this three-point thing, the starting point. That says 45. I'm coming from

the fact-- and to me the facts support anything from 30 to 60, which is, you know, in the area of this three-point penalty.

Obviously we're not -- if I believed that, we're not going to ask for 60, but we're not going to ask for something ridiculously low. We're going to ask for something that we think is reasonable, and we're asking for 40, which I clearly think is in the realm of reasonable.

But I just said reasonable has a range in this case, and we're trying to present what facts we have to support the area that we're in.

MR. STOVALL: Okay. I have no further questions.

Mr. Examiner, for your aid and benefit, since we're starting to take penalty orders in the Indian Basin into consideration, I would recommend that you also take administrative notice of Order R-9050-A, which was a Commission order, establishing a penalty against Marathon for an unorthodox gas well location in the Indian Basin-Upper Penn.

And that order contains some language in the findings which sort of indicates how the Commission thinks penalties work. Again, it's

just to throw it into the pot, I think, since there is a Commission order.

And Order R-9050-C, which was also actually the same well for Marathon, which was completed in the Indian Basin Morrow. The Commission used reasoning in those cases that simply measured off the corner since the complaining operator was diagonally offset to the well.

But it does indicate some of the Commission's line of reasoning that I think should be considered along with the other orders. I recommend you take those into the record as well.

EXAMINER CATANACH: Those orders will be taken administrative notice of.

EXAMINER CATANACH: One more question, Dr. Boneau.

FURTHER EXAMINATION

BY EXAMINER CATANACH:

Q. Is it my understanding you are recommending a 40 percent penalty as opposed to a 45 percent as contained on one of your exhibits?

A. The recommendation is a 40 percent penalty, which would be a 0.6 acreage factor.

MR. STOVALL: Exhibit 16 is the one you're referring to?

EXAMINER CATANACH: Right.

Q. Your 40 percent penalty is somewhat lower than the 45 percent that you've calculated. Is there any reasoning for that?

A. On Exhibit 15 the 33 percent penalty is the penalty that I've tried to suggest, and the 40 is somewhere between 43 and 35.

EXAMINER CATANACH: Okay. I have nothing further.

Anything further of this witness?

MR. VANDIVER: Mr. Examiner, since there's been mention of the MW Apache well in Section 13, I might also refer you to Order No. R-9619 concerning a well located 330 from the north and west lines of Section 13.

EXAMINER CATANACH: Administrative notice will be taken of Order R-9613.

MR. VANDIVER: Nothing further of this witness.

EXAMINER CATANACH: The witness may be excused.

Why don't we take a ten-minute break at this point.

[A recess was taken.]

EXAMINER CATANACH: Let's proceed.

Mr. Carr.

MR. CARR: At this time we call Brian Huzzey.

BRIAN H. HUZZEY

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

EXAMINATION

BY MR. CARR:

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

A. Brian H. Huzzey.

Q. Where do you reside?

A. Midland, Texas.

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

A. Chevron USA as a production and reservoir engineer.

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

A. No, I haven't.

Q. Could you summarize for Mr. Catanach your educational background and then briefly review your work experience?

A. Graduated from West Virginia University in 1982 with a BS in petroleum engineering. That was in May of 1982. Hired on with Gulf Oil Corporation in June and continued working through the merger with Chevron.

I have approximately three years with facilities equipment design, two years as an equipment -- or production and field engineer, and five years as a reservoir engineer.

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

A. Yes, I am.

Q. Have you made a study of the portion of the Indian Basin-Upper Penn Field that is involved in this case?

A. Yes, I have.

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

EXAMINER CATANACH: He is so qualified.

Q. Initially, Mr. Huzzey, would you explain what Chevron seeks by participating in this hearing?

A. We seek to protect the correlative rights of offset operators to this proposed

location.

Q. And are you going to request that a penalty be imposed on the Yates well?

A. Yes, we are.

Q. Are you seeking a penalty in the Morrow or just in the Upper Penn?

A. Just in the Upper Penn.

Q. Is Chevron one of those offsetting owners or operators?

A. In the Morrow or Upper Penn?

Q. In the Upper Penn.

A. Yes.

Q. Did you own acreage offsetting diagonally to the northwest?

A. Yes, we do.

Q. Do you also own an interest in the property which offsets the proposed unorthodox location in the tract due north?

A. Yes, we do.

Q. Have you prepared an exhibit for presentation here today?

A. Yes, I have.

Q. Would you go to what has been marked as Chevron Exhibit No. 4, identify this, and review the calculation for Mr. Catanach?

A. The exhibit is titled, "Yates Petroleum Corporation's Application for Unorthodox Location." If you'll look at the first highlighted area and underlined is proposed acreage factor based on distance from lease lines. You'll see that we have the 660 foot location and the 860 foot location shown and the associated acreage factor with those wells, with those locations.

The 660 foot location has an acreage factor of .4. And the 860 foot location has an acreage factor of .52.

Q. And next one on the exhibit we have an acreage calculation?

A. Yes. The next highlighted underlined area shows the acreage factor based on the acreage. As you can see, we use 163.6 acres, which is a very generous interpretation. And this resulted in an acreage factor of .26.

Q. In fact, the 163.6 figure is what? The number of productive acreage you estimate in Section 23?

A. Yes.

Q. And Yates was projecting 147?

A. Yes.

Q. Your geologic interpretations are so close that you're not intending to call a geological witness?

A. That's true.

Q. If you use the 163.6 figure and divide that into the 640-acre standard unit, that's how you get the .26 acreage factor figure?

A. That is correct.

Q. And if you use the Yates number, the 147 figure, in fact that would result in a smaller acreage factor?

A. Correct.

Q. So this number is in fact more generous than if you utilized the geologic interpretation presented by Yates?

A. Yes.

Q. All right. Let's take a look at the next portion of this exhibit.

A. Okay. The next portion that is highlighted and underlined is average of proposed acreage factors from distances and acreage. The first one is the average value of the two distance acreage factors and shows a .46 average acreage factor.

Q. So that one would take into calculation

just the extra encroachment toward the north, northwest, and west?

A. Yes.

Q. Okay. And the next calculation?

A. Next calculation shows the acreage factor based on acreage of .26 and the 660 foot location, which is .40. The average of these two is a .33 acreage factor.

The final average below that shows the acreage factor once again of .26 and the 860 foot location, which has an acreage factor of .52 for an average acreage factor of .39.

Q. All right. Now, let's go to the information set forth in the box at the bottom of Chevron Exhibit No. 4. Would you review that for Mr. Catanach?

A. The box has a subtitle in it of Chevron's recommended acreage factor. To be equitable we thought we would use both distance and acreage. If you go from top to bottom, it shows the acreage factor based on acreage of .26; the 660 foot location, which is .40; the 860 location, which is .52, for an average acreage factor of .39.

Q. Is that the acreage factor that you

recommend be assigned to the Yates Petroleum Diane ALQ Federal No. 1 well if in fact it is drilled at the proposed location?

A. Yes, it is.

Q. And against what should this acreage factor be applied?

A. The allowable in this field.

Q. What is the current allowable rate for wells in the field?

A. I believe that the current allowable is 5,200 Mcf a day.

Q. And if you apply your recommendation, that is 39 percent of that allowable rate, approximately what producing rate would you get?

A. That would be in excess of 2,000 Mcf a day.

Q. Mr. Huzzey, you were here when Yates presented its Exhibit No. 15; is that correct?

A. Yes.

Q. And on the left-hand side of that exhibit, it has a figure for a producing rate of 2,000 a day?

A. Yes.

Q. And if you utilize this exhibit and a 2,000 a day producing rate -- which would be

permitted under your penalty; correct?

A. Correct.

Q. -- what is the ultimate recovery indicated on this exhibit that you would attain?

A. 1.6 Bcf.

Q. Were you present when Dr. Boneau testified as to what he estimated was remaining under the tract?

A. Yes.

Q. What was that?

A. 1.6 Bcf.

Q. If your penalty, recommended penalty figure is applied based on current allowables, in your opinion would Yates be able to produce the reserves that are producible that remain under Section 23?

A. Utilizing Yates' exhibit, yes.

Q. Is this penalty in this amount necessary to protect the correlative rights of Chevron?

A. Yes, it is.

Q. Was Exhibit No. 4 prepared by you?

A. Yes, it was.

MR. CARR: At this time I'd move the admission of Exhibit No. 4.

EXAMINER CATANACH: Exhibit No. 4 will be admitted as evidence.

MR. CARR: That concludes my direct examination of Mr. Huzzey and concludes Chevron's presentation unless you desire a geological case also be made.

EXAMINER CATANACH: Mr. Vandiver.

MR. VANDIVER: Thank you.

EXAMINATION

BY MR. VANDIVER:

Q. Mr. Huzzey, why did you not use the excess area computation in calculating your proposed penalty in this case?

A. Are you referring to the double-circle method?

Q. The double-circle method.

A. Okay. We feel that with the amount of control we have with three dry holes in this section, that acreage has to play a part in the calculation for this penalty.

Q. Were you involved -- you're familiar with the well that's been discussed this morning drilled by MW Petroleum in the northwest quarter-northwest quarter of Section 13?

A. Yes, I'm familiar with that one.

Q. And in that case did you analyze the reservoir and the application of MW prior to the hearing in that case?

A. I have briefly reviewed it, yes.

Q. And that well is the second well drilled in the Upper Penn in Section 13?

A. That is correct.

Q. And the first well, as has been testified today, produced approximately 8 Bcf?

A. I believe the figure I have is 8.18 Bcf as of March of this year.

Q. And do you have an opinion as to the number of productive acres that were originally in Section 13?

A. The original acreage that would be drained?

Q. Yes. The original productive acres.

A. I have not studied that.

Q. Was a productive acreage calculation used in arriving at a penalty in that case?

A. For the MW well?

Q. Yes.

A. I believe so.

Q. And in that case do you know the number of productive acres that were used in that

calculation?

A. At one time I was familiar with that number. I don't remember it offhand.

Q. All right. It was greater than the 163 acres that you're utilizing in this case, though?

A. If you say so.

Q. You don't know?

A. I can look it up, if you would like.

Q. In that case the well was located 330 feet from the north and west lines?

A. That appears correct from my map.

Q. And Chevron agreed to a 62 percent penalty in that case, which is approximately the same as the penalty that you're proposing in this case?

A. That sounds correct.

Q. And that's regardless of the fact that MW had already produced 8 Bcf from Section 13, and there were likely much fewer productive acres remaining?

MR. CARR: Do you know that?

A. Would you restate your question?

Q. The number of productive acres available to be drained in Section 13, I would take it, had been reduced by the first well on

Section 13?

A. True.

Q. And have you reviewed the geological exhibits presented by Yates in this case?

A. Briefly, yes.

Q. And do they show that the dolomite pinches out across the southern part of Section 13?

A. If you'll provide me with an exhibit, I'll see if that's so.

Q. All right.

A. Are you referring to this exhibit that I have in my hand?

Q. Yes. That is Yates Exhibit 8, I believe.

So, in any event, prior to the first well in Section 13, there were not 640 acres of dolomite at least as reflected by that exhibit?

A. As reflected by Yates' interpretation of the reservoir in this area, yes.

Q. And then 8 Bcf of gas was produced, and yet the entire productive acreage was used in calculating the penalty in that case?

A. Penalty for the MW well?

Q. Yes.

A. As I stated, I've looked at that previously. I have not memorized that case, the presentation.

Q. All right. Does Chevron own an interest in the well in Section 22?

A. Not that I'm aware of.

Q. Your interest is only in the wells to the north and northwest?

A. I believe that's correct.

Q. And those wells have produced how much to date?

A. Okay. As of March of this year, from PI data, the Helbing Federal, which is in Section 15, has produced 33.04 Bcf. Marathon's well due north of the proposed location has produced 30.39 Bcf as of March of this year.

Q. Are you familiar with the well in Section 12? I believe it's also an MW well.

A. To a degree.

Q. Did you take part in the analysis of the penalty in that case when they proposed a location on the west line of that section?

A. I believe I've heard somewhat of the different factors that were used for the penalty and acreage factor calculations there.

Q. And what were the factors that were used in calculating the penalty in that case?

A. Might I just skip this and say that, as far as I'm aware, three basic methods have been utilized in this field: the double-circle method, distances, and acreage factors or combinations thereof. That's what we based ours on. Methodologies that have been used previously excluding the double-circle for reasons I've already stated.

Q. But you're aware of the well in Section 12?

A. Yes.

Q. And it was the second well drilled on that section?

A. That appears to be correct, yes.

Q. Do you know the cumulative production from the first well in Section 12?

A. As of March of this year, according to PI once again, in Section 12 the other well produced 30.21 Bcf.

Q. And is it still producing or --

A. I believe it's currently not producing.

MR. VANDIVER: That's all the questions

I have, Mr. Examiner.

EXAMINER CATANACH: Anything further of this witness?

MR. CARR: Nothing further.

EXAMINER CATANACH: The witness may be excused.

MR. CARR: Mr. Catanach, that concludes Chevron's presentation in this case.

EXAMINER CATANACH: You may proceed, Mr. Kellahin.

MR. KELLAHIN: Thank you, Mr. Examiner. I'd like to call Mr. Craig Kent.

Mr. Examiner, we too have brought our Indian Basin penalty orders, which we will add to your stack.

MR. STOVALL: Mr. Examiner, I think this is all very helpful because it gives you all the ones you should eliminate and come up with something entirely new.

MR. KELLAHIN: And that's what we're going to propose to you.

CRAIG KENT

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 Craig Kent, and I'm a reservoir engineer for Marathon Oil Company in Midland, Texas.

Q. Mr. Kent, on prior occasions have you testified before the Oil Conservation Division as well as the Oil Conservation Commission concerning unorthodox well locations in the Indian Basin-Upper Penn Pool?

A. Yes, I have.

Q. Have you continued to be involved in that reservoir as a reservoir engineer on behalf of your company?

A. Yes, I have.

Q. Does that remain and continue to be one of your primary responsibilities and duties as an employee of Marathon?

A. Yes, it is.

Q. Have you made recommendations to the Examiner with regards to establishing an equitable penalty for the well to be drilled at the Yates' proposed unorthodox well location?

A. Yes, I do.

MR. KELLAHIN: We tender Mr. Kent as an expert reservoir engineer.

EXAMINER CATANACH: Mr. Kent is so qualified.

MR. KELLAHIN: So that the record is clear, Mr. Examiner, I would like to have you take administrative notice of those orders that I handed to you in our package of orders dealing with the Indian Basin. I'm simply going to read the order number, and I will repeat some of those that are already admitted into the record.

Not in any particular order, but simply in the order that they were stapled as Order No. R-6310, R-4172, R-8890, R-8913, R-5802, R-5802-A de novo, R-9526, R-9715, R-9487, R-9487-A, R-9487-B, R-9619. That's it. We would ask that you take administrative notice of those additional orders that have not already been admitted into the record.

EXAMINER CATANACH: Administrative notice will be taken of those additional orders, Mr. Kellahin.

Q. (BY MR. KELLAHIN) Mr. Kent, let's talk specifically about Section 23 and the three wells that have already been attempted in this

reservoir within that section. Can you identify for us the first well that was attempted in this reservoir in that section?

A. I believe the first well that was attempted was the Monsanto No. 1 Lowe Estate, which is in the southern portion of Section 23.

Q. What success did the operator have, if any, with the drilling of that well in the attempt to produce commercial gas out of this reservoir?

A. That well was plugged and abandoned by Monsanto after unsuccessful -- or noncommercial DSTs.

Q. What is the next well that was attempted by anyone for this reservoir in that section?

A. The next well was the Texas Oil & Gas 1 Lowe Federal, which is located in the northwest quarter of the section.

Q. Did the operator attempt any efforts to take drill stem tests or other methods by which to establish an indication of commercial gas production in this reservoir in that well?

A. Yes. There were DSTs taken, but again the well was plugged and abandoned due to

noncommercial gas production.

Q. The third well to be attempted in this reservoir in this section is what, sir?

A. It's the Harvey E. Yates 1 Southeast Indian Basin 123.

Q. Let me direct your attention to the package of orders that I have presented to you and if you'll look maybe 20 percent down through the order set and find Order No. R-5802. Do you have that, Mr. Kent?

A. Yes, I do.

Q. The Harvey E. Yates Company proposed to drill a well at the unorthodox location that's shown in that order?

A. That's correct.

Q. What did the Division determine to be an appropriate penalty for that well, and how did they derive that penalty?

A. The Division found that a penalty of 68 was appropriate. And there were two factors that were involved. First was a calculation of an acreage factor that would be calculated using a double-circle method. And the second was an acreage factor that was calculated based on productive acreage. These two acreage factors

were then multiplied by each other to give the resulting acreage factor.

Q. What was the maximum productive acreage component used in the penalty calculation?

A. In this particular case they found that the maximum number of productive acres was 331.6 acres.

Q. Did the operator elect to drill the well pursuant to this penalty order?

A. Yes.

Q. With what result?

A. It was also a noncommercial well.

Q. Based upon your experience with the various penalties involved in this reservoir in an attempt to balance the equities of all parties, do you have a recommendation to the Examiner as to how to construct, at least in terms of methodology, an appropriate penalty?

A. Yes, I do.

Q. In your opinion is it appropriate to construct a penalty in this reservoir that uses as a single penalty parameter simply the distance of encroachment?

A. It would be if there was a full 640 acres productive under the tract.

Q. Is there any doubt in your mind, as a reservoir engineer, that there is 640 acres productive in Section 23?

A. There is substantially less than 640 acres productive in Section 23.

Q. In your opinion is the productive acreage calculated by Dr. Boneau a reasonable productive acreage amount to use in a penalty calculation?

A. Yes, it is.

Q. Have you used and encouraged others to use an acreage factor penalty?

A. Yes, we have.

Q. And those acreage factor penalties have been applied against your wells, have they not?

A. That's correct.

Q. You've negotiated and stipulated to penalties for other operators using acreage as a component of the penalty.

A. That's also correct.

Q. Describe for us how you would construct a penalty?

A. The penalty that I would propose as being most equitable would be made up of two factors: First being a distance method

calculation, which ratios the distance from the lease line to the appropriate standoff. The second factor would be a factor which ratios the productive acres in the section to the number of acres in a standard proration unit.

Q. If I remember correctly, I think the Chevron engineer had used a little different arithmetic in getting to the penalty.

A. That's correct.

Q. He was using similar parameters, but he averaged the three?

A. That's correct.

Q. How is yours different?

A. In my calculation only the two factors are averaged, and that's being the distance to the lease line as well as the productive acres.

Q. Tell us how you would do it for this case.

A. I would take, in this case, the 660 feet divided by 1650 feet, plus the 145 acres, divided by 640 acres, which would yield an acreage factor -- and divide the sum of those two by 2, which would yield an acreage factor of .31.

Q. And the acreage factor then is that

portion of the allowable that you can produce for the well?

A. That's correct.

Q. The well is located, proposed to be located 660 feet from the north line?

A. That's correct.

Q. So, as the numerator then, you take 660 over the 1650, as the denominator?

A. That's correct.

Q. And then you take 860, as the numerator, over 1650 to get the west line dimension?

A. That is correct.

Q. And you take those two percentages and average those together to get the distance encroachment component?

A. That would be one way of doing it.

Q. What did you do that's different?

A. I took just the encroachment to the north section.

Q. Why did you give Yates the benefit of not having a penalty component for the west encroachment?

A. Basically the penalty that would be calculated to the closest offset would serve to

protect not only that closest offset tract, but also the remaining three -- or the remaining two tracts.

Q. Okay. Taking that and then the acreage, what is your ultimate recommendation then for the penalty, expressed as a penalty?

A. My recommendation for a penalty would be 69 percent.

Q. Dr. Boneau used in his Exhibit No. 14 an original reservoir pressure of 2921 PSI?

A. [Nodded.]

Q. Is that your recollection, as a reservoir engineer, of the approximate original pressure in the pool?

A. That's approximately the original pressure.

Q. What is your best engineering judgment as a reservoir engineer of the current bottomhole pressure in the reservoir?

A. It ranges between 1300 and 1500 PSI.

Q. Okay. Are the other parameters used by Dr. Boneau in his calculation of the gas in place consistent with those values that you would use as a reservoir engineer in calculating gas in place?

A. Yes. The numbers that were used in his calculation are reasonable.

Q. Mr. Vandiver asked questions of the Chevron witness with regards to his knowledge of some of the other penalties in the immediate area. Let's address those with regards to the Apache wells in Sections 12 and 13.

A. Okay.

Q. I believe only the well in 13 encroached upon the Marathon acreage?

A. That's correct.

Q. Describe for us the circumstances surrounding that penalty, Mr. Kent, and what the components utilized were in that penalty?

A. As I recall, the well in Section 13 had ceased to produce. And --

Q. The first well in the section?

A. That's correct, the first well. And there was evidence of mechanical difficulties with the well, as depicted to us by MW, leading us to believe that there was still productive acres under that tract.

Q. Let me take you to the end of the stapled package of penalty orders in the pool. And look at Order No. R-9619. And then if you'll

EXAMINATION

BY MR. VANDIVER:

Q. Mr. Kent, with regard to the well in the order in Section 13 on the MW well, you used 358 acres in the productive acreage calculation?

A. That's correct.

Q. Is that not the number of acres you considered to be productive before the first well was drilled?

A. Without looking at the map, I can't tell you off the top of my head.

Q. Did you -- you were involved in these negotiations?

A. In parts of these negotiations, yes.

Q. What was your function, and what information did you review?

A. Basically at that time my function was to provide information as to other penalties that have been used in the Indian Basin Field.

Q. And have you reviewed the exhibit that Yates presented with regard to the productive acres in this field?

A. You're meaning the isopach or the dolomite?

Q. Yes.

A. I've looked at it briefly.
Q. And does that show approximately 350 acres in Section 13?
A. According to Yates' analysis, that would be correct.
Q. Was there any -- was the fact that the well in Section 13 had already produced 8 Bcf taken into account in determining the productive acres?
A. No, it wasn't.
Q. So they were given the benefit of 358 acres without any regard for the previous production?
A. No, that's not correct, because there was still substantial pressure under that tract that says there's also substantial reserves remaining to be recovered.
Q. And you're asking for a greater penalty in this case when that well was 330 from the north and west lines?
A. That's correct, because in that case there was substantially greater productive acres than we have in this particular case.
Q. But you didn't take into account what had already been produced?

A. As a function of the penalty calculation, no.

Q. And that's also the case in Section 12, the MW well in Section 12?

A. I haven't reviewed that one as closely, but I believe that one was a -- three factors were applied in that one, being offset, double-circle, and productive acres.

Q. And how much had the first well produced in that section?

A. I believe it was something around 30 Bcf.

Q. Do you know the number of productive acres that were applied in the productive acreage formula?

A. We weren't directly involved with that, and, off the top of my head without looking, I couldn't tell you.

Q. Okay. Review again for me the method that you used in arriving at the 69 percent penalty. The first was 660 over 1650?

A. That's correct.

Q. And then the other was just the productive acreage, and it was 145 over 640?

A. That's correct.

Q. And explain again why you disregarded the 860 setback?

A. Because we felt that the penalty to the closest tract would serve to protect the correlative rights in the other two tracts.

Q. It just increases the penalty to disregard the 860 figure, does it not?

A. Depending on how you make the calculation.

Q. Have you ever used a method of calculating the distance between wells in arriving at a penalty?

A. No, I haven't, but the distance between wells is irrelevant. The state has set up standard offsets for this pool.

Q. Well, have you not raised that as a possible component of a formula to determine a penalty?

A. No. All I've raised is the possibility of including the distance to the nearest offset tract, not to the nearest well.

Q. Have you used distance between standard locations in ratios in suggesting a component for a penalty calculation in this deal?

A. You might have to explain that one to

me.

Q. Well, in this case, it seemed to me, Case No. 9954, you suggested the distances between standard locations, a ratio based upon those distances as being a reasonable method for arriving at a penalty calculation.

MR. KELLAHIN: Objection to the form of the question. Is the witness able to recall the subject matter of this issue by knowing the case number?

THE WITNESS: No.

MR. KELLAHIN: Would you help the witness to recognize what you're talking about?

Q. (BY MR. VANDIVER) You recall testifying in a case on, I believe it was a Morrow well, and that was located -- I don't even think it's in this township. It's located in Section 8 of 21 -- no. I'm sorry. It's in Section 9 of 21-23.

MR. KELLAHIN: What's the caption of the case?

MR. VANDIVER: It's the application to include a provision for dual completion of an unorthodox gas well location for the undesignated Indian Basin-Morrow Gas Pool, Case No. 9954,

Order R-9050-C.

MR. STOVALL: That's the case that the Division has put into the record, which was -- I believe you did testify in that case.

THE WITNESS: That's correct, I did testify. And there were --

MR. KELLAHIN: I'm going to object. That dealt with the penalty in the Morrow. We're not proposing and do not suggest a penalty for Yates in the Morrow in this case. We're dealing with the Upper Pennsylvanian penalties that were utilized.

MR. STOVALL: My recollection of that case and the "A" order under that same designation are that they used the same methodology. So I think that -- and that was the Indian Basin-Upper Penn. So, I believe, my recollection, and we have the orders in the record, is that the "C" order tracked the "A" order. And it may be better to refer to the "A" order, which is the Upper Penn order, if that satifies your concern.

MR. KELLAHIN: I don't know where this is going. In that case, Mr. Kent and Mr. Carr's witnesses, we must have presented 20 different

suggestions on how to do this. And that's about how many we have here today.

MR. STOVALL: I guess what you're saying at this point, and I think I would agree, is we need to start fresh here.

What are you trying to get to, Mr. Vandiver, so we get back on track here? We know which case you're talking about here now. So I think you can proceed with the questions.

MR. VANDIVER: The line of questioning was intended to suggest that the formula most advantageous to the party was presented.

Q. You think that it is just and fair to propose a 69 percent penalty in this case in relation to the well in Section 16 -- I mean 13, a larger penalty than the well in Section 13?

A. Yes, I do due to the larger amount of productive acres within the tract under Section 13.

MR. VANDIVER: I don't have any further questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Kent, do you have an idea of how much the subject well may initially be able to

produce?

A. Based on the offsets, the well in Section 14 produces somewhere on the order of 3 million a day; the one in Section 15, up to around 5 million a day. Depending on how good of a dolomite section they encounter, they could be able to produce up to the allowable.

We have completed wells in thin portions of dolomite and the actual completion within very thin portions of dolomite and been able to produce at rates equal or above the allowable.

EXAMINER CATANACH: I have nothing further of the witness.

MR. KELLAHIN: Nothing else, Mr. Examiner. That completes our presentation.

EXAMINER CATANACH: Would counsel like to give closing statements? It's up to you.

MR. CARR: Yes.

EXAMINER CATANACH: Mr. Carr, go first.

MR. CARR: May it please the Examiner, I would suggest that this is really a very simple case, if you remember certain fundamental matters that I suggested control your decision when you

review the record made here today.

As we all know, you and this agency have a duty to protect correlative rights, and that's a defined term in the Oil & Gas Act. And in doing that, Mr. Catanach, you may impose a penalty to offset the advantage that is gained by an unorthodox location.

We've heard an awful lot about what may or may not have been done in other cases, sometimes explaining what input factors were used, other times not. But I would suggest to you that you've got to decide this case on what has been said here and what has been presented today.

Chevron comes before you asking you to do your duty. We're directly in a diagonal offset, and we're asking you to impose a penalty. Yates, on the other hand, comes before you. They are more than 50 percent too close, both to the north and to the west as well as to the northwest.

And with only 147 instead of 640 productive acres by their own estimates, and they're saying, Mr. Catanach, impose absolutely no penalty at all, and I mean that. If you think

about what Dr. Boneau has said to you today, Mr. Catanach, he says we expect to get a 3 million per day well, and we think what you should do is impose a 40 percent penalty.

Well, current allowables in this field are 5,2000 a day. If you take their proposed penalty and you apply it to the current allowable rate, they'd be allowed to produce 3.12 million per day.

I submit to you that when you're expecting to drill a 3 million a day well and you're asking for a quote, unquote "penalty" that would let you produce 3.1 a day, they're asking for absolutely no penalty at all. And if you grant that, you've failed to meet your duty. You have not protected correlative rights. You have not acted to offset the advantage they are gaining on us.

And what they're presenting to you and basing their calculations and what we're going to cite to you and utilize is our Exhibit 15. And they're using decline curves. And these declines are based on the worst well in the pool. And if they do any better than that, if they don't experience 35 percent decline rates, they're

going to even do better. And any penalty that they would propose would even be farther away from a meaningful penalty.

Correlative rights is a defined term. It means the opportunity to produce your fair share. Opportunity, that's the key. Unfortunately for Yates, when we talk about correlative rights, this is one area where we do wake up in a new world everyday. And if you don't do something, you lose your correlative rights.

And now they come in and the one thing that falls out of this case, I submit like a bombshell, is they say yes, we're asking for authority to drain our neighbor because we didn't act. They're asking you while citing historical precedent, on one hand to forget history, forget the Oil & Gas Act, and give them what was there. Day by day they didn't exercise their opportunity to produce it. And now they're asking you to go back and give them what they fail to develop.

If you look at their Exhibit 15 -- and I think this is the critical exhibit in the entire case -- you can see that Chevron is standing before you asking for a 39 percent

allowable factor, 61 percent penalty, apply that to the current allowable rate. And when you do that, you'll see that what we're recommending is they get to produce slightly more than 2,000 a day. Look at their exhibit. 2,000 a day lets them produce 1.6 Bcf, and that's what Dr. Boneau says they still have.

We're recommending that you let them have what they can produce today now that they have elected to exercise their correlative rights and do what the rest of us did long ago and I'm talking about what they needed to do, drill a well.

If you give anything less than the penalty, the penalty we are recommending, you're doing what they want you to do. You're authorizing drainage, you're forgetting the Oil & Gas Act. You're throwing out the statutes which govern your activity, and you're simply authorizing drainage, and we submit that is something you cannot do.

EXAMINER CATANACH: Mr. Kellahin.

MR. KELLAHIN: Mr. Examiner, this is one of the simplest presentations in all of the Indian Basin cases and gives you a clear,

dismissed using productive acreage because it was too speculative, not so in this case.

Look at the wealth of information and control. Had this been the first well in the section, well maybe you wouldn't really know where the edge of the dolomite was. Had this been the second well in the section, you might say, well, there is still probably some doubt about the edge of the dolomite. After the third well, how can you have much doubt about where the limits of that reservoir are?

You can look at Exhibit No. 13 and look at all the shots in the reservoir. Look at the control points over in 22. This is undisputed. We didn't put on geologic evidence to dispute this issue. That 145 productive acres is within a few percentage points of what we would use. That's an amazing fact that sets this case off unique unto itself.

There is no reason to give Yates a windfall by manipulating the penalty components to justify this corner shot into the reservoir. Why don't we forget all this stuff? Let's go to Dr. Boneau's Exhibit No. 15 and just look at the bottom line.

With his own calculation, using the most pessimistic decline curves I have ever seen in this reservoir, he says that he's going to get 1.6 Bcf of gas, is all he's got left, with a 65 percent penalty, and he can get 2 million a day, and that's a commercial well for him. I asked him that question, and he gave me that answer.

Why do anything else? This is more than they deserve. They get all the remaining gas in place that's left. That's all they're entitled to. It's smoking mirrors to suggest that we go back and reconstruct the original gas in place volumes in the reservoir and give them that.

And it's not our fault that they failed to exercise the opportunity to protect their correlative rights. This exhibit tells you what to do, and we encourage you to do that.

Thank you.

EXAMINER CATANACH: Mr. Vandiver.

MR. VANDIVER: Mr. Examiner, Yates, of course, is seeking most of all approval of its unorthodox location. I don't believe there's any dispute that this is the optimum location in the section for the drilling of an up-end well. And,

of course, Yates recognizes that a penalty will be imposed in this case.

I believe that Yates' point is not that a generic solution should be fashioned for these wells and that you do have to look at this on a well-by-well basis. But it is clear from history that, as Dr. Boneau testified, in numerous cases that wells have drained a substantial amount of the reservoir.

And then when the operator came in and asked to drill a well in the northwest quarter of the section, the productive acres was included as a factor in determining the penalty. And in none of those cases was the fact that the reservoir had been depleted taken into consideration in determining those productive acres.

And it's unfair to use the productive acreage component in those cases and including all the productive acreage regardless of the amount of gas that had previously been produced and then apply the factor to Yates in this case. That would not allow Yates the opportunity to produce a fair and equitable share of gas in this pool.

And so I would urge the Examiner first

to grant the application for the unorthodox location and then request that you apply a penalty on the production in line with the testimony of Dr. Boneau. Thank you.

EXAMINER CATANACH: Anything further in this case? There being nothing further, Case 10544 will be taken under advisement.

[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. 10544, heard by me on September 16 1982.

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 OCTOBER 12, 1992.

Debbie Vestal

DEBBIE VESTAL, RPR
NEW MEXICO CSR NO. 3