STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	)	CASE NO. 11,167
APPLICATION OF YATES PETROLEUM CORPORATION	)	

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

December 15th, 1994

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, December 15th, 1994, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, before Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

December 15th, 1994
Examiner Hearing
CASE NO. 11,167

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E X H I B I T S

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A P P E A R A N C E S

FOR THE DIVISION:

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FOR THE APPLICANT:

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By: WILLIAM F. CARR

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WHEREUPON, the following proceedings were had at 2:07 p.m.:

EXAMINER STOGNER: At this time I'll call Case Number 11,167.

MR. CARROLL: Application of Yates Petroleum Corporation for an unorthodox infill gas well location and simultaneous dedication, Eddy County, New Mexico.

EXAMINER STOGNER: At this time I'll call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, Berge and Sheridan.

We represent Yates Petroleum Corporation in this matter, and I have three witnesses, one of whom -- one of which -- one witness has not been sworn today.

EXAMINER STOGNER: Will the one witness that hasn't been sworn today please stand to be sworn at this time?

(Thereupon, the witness was sworn.)

EXAMINER STOGNER: Mr. Carr?

MR. CARR: May it please the Examiner, our first witness is Robert Bullock. I would request that the record reflect that he has previously been sworn and his qualifications as an expert witness in petroleum land matters accepted and made a matter of record.

EXAMINER STOGNER: The record will so show. And Mr. Bullock, I remind you that you're still under oath and your credentials have been accepted.

ROBERT BULLOCK,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Bullock, are you familiar with the Application filed in this case on behalf of Yates Petroleum Corporation?

A. Yes, sir.

Q. Are you familiar with the status of the lands in this area?

A. Yes.

Q. Could you briefly state what Yates seeks in this case?

A. Yates seeks Application for an unorthodox infill gas well location and simultaneous dedication.

We seek approval to drill our Vandiver "CN" Com Number 2 well at an unorthodox gas well location, being 1242 feet from the north line and 808 feet from the east line of Section 18, Township 18 South, Range 26 East, in the West Atoka-Morrow Gas Pool.

We further seek exception to Division Rule 104

(C) (2) to continuously and concurrently produce gas from the two wells, the Vandiver "CN" Com Number 2, from the existing Vandiver "CN" Com Number 1 well, located in the north half of this section.

Q. The Vandiver "CN" Com Number 1 well is also at an unorthodox location, is it not?

A. That's correct.

Q. And that location was approved by Division Order Number R-4508?

A. That is correct.

Q. And in what pool are these wells completed or to be completed?

A. In the West Atoka-Morrow Gas Pool.

Q. Let's go to what has been marked for identification as Yates Petroleum Corporation Exhibit Number 1. Could you identify that and review it for the Examiner?

A. This plat seeks to show our proration unit in Section 18 of 18-26, being the north half of the section.

We've indicated our proposed location for the Vandiver "CN" Com Number 1 [*sic*].

We've also shown the existing gas well, the Vandiver "CN" Com Number 1 well.

We also attempt to show the existing wells in the offset sections and the producing wells, as well as the

abandoned wells.

Q. The solid red circles indicate shallow oil wells?

A. That's correct.

Q. What is the character of the land? State, federal or fee?

A. This land is all fee.

Q. If we look at the offsetting owners to the proposed Vandiver "CN" Com Number 2 well, who operates all offsetting tracts to the north, south and east?

A. Yates Petroleum is the operator of these existing wells at this time.

Q. They do have differing royalty or overriding royalty burdens?

A. Yes, sir.

Q. So the unorthodox location only encroaches in Yates-operated tracts, but there are differing -- there are differing owners of the override and the royalty?

A. That is correct.

Q. Okay, let's go to Exhibit Number 2.

Is this an affidavit confirming that notice of this Application has been afforded to all offsetting operators who might be affected by this Application?

A. Yes, sir, we have checked the records and attempted to do this.

Q. And we have given notice to the operators that

even are west of the proposed tract on which you're proposing to simultaneously dedicate wells?

A. That's correct.

Q. Will Yates also be calling engineering and geological witnesses to review the technical portions of this case?

A. Yes, sir.

Q. Were Exhibits 1 and 2 either prepared by you or compiled at your direction?

A. Yes.

MR. CARR: Mr. Stogner, that concludes my direct examination of Mr. Bullock, and I move the admission into evidence of Yates Exhibits 1 and 2.

EXAMINER STOGNER: Exhibits 1 and 2 will be admitted into evidence at this time.

And I have no questions.

MR. CARR: At this time we call Brent May.

Mr. May has also testified today, he has been sworn, and I would like the record to reflect that he remains under oath and that his qualifications as an expert witness in petroleum geology have been accepted and made a matter of record.

EXAMINER STOGNER: Mr. May is so qualified, and let the record show that Mr. May has been previously qualified and sworn in.

BRENT MAY,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Initially, Mr. May, could you state the reason for the requested unorthodox location?

A. These are based on geologic conditions, along with the --

Q. I'm sorry, I can't hear you.

A. These are based on geologic conditions that are present.

Q. And the primary objective is what formation?

A. It's what we call the lower Morrow clastics interval.

Q. Let's go to what has been marked for identification as Yates Exhibit 3, and I'd ask you to first identify this exhibit and then review it for the Examiner.

A. This is an isopach map of the lower Morrow clastics stratigraphic interval.

Areas of greater relative thickness are called and labeled thicks on this map.

The double-circled well spots are Morrow penetrations. The red-colored well spots indicate lower Morrow gas producers.

Contour interval is 20 feet with a 50-foot contour added.

The spacing unit is outlined in red, and the proposed location is shown.

Also, a trace of the accompanying cross-section with the proposed location translated down to the trace is shown.

Q. Why don't we go and look at Exhibit 4 and have you just identify that, your cross-section, and then we can go back and discuss both exhibits together.

Would you identify Exhibit Number 4, please?

A. This is a southwest-to-northeast stratigraphic cross-section, hung on the top of the Morrow clastics.

The interval mapped on the previous exhibit, which is the lower Morrow clastics interval, is labeled on this cross-section. And also a Mississippian unconformity is shown, along with the top of the Mississippian Chester Lime and perforations and DST's in both wells, along with the proposed location.

Q. Why don't we go back now to the isopach, Exhibit Number 3?

Could you review for the Examiner what this exhibit actually depicts and then explain the significance of that?

A. The isopach depicts the varying thickness of the

lower Morrow clastics stratigraphic interval.

Experience in this area that those shows that the wells along or close to the axes of these thicks in the lower Morrow have a much better chance of encountering Morrow and thicker Morrow channel sand bodies which are capable of producing very good economic volumes of gas.

For example, there's a lower Morrow thick which stretches from the middle of Section 7 of 18-26, down through the west part of Section 18 and down through the east part of Section 24 of 18-25. This specific lower Morrow thick can be up to 180 feet in thickness and contains within it channel sand bodies up to 90 feet in thickness.

Five wells along or close to the axes of this thick have produced the following cumulative totals of gas.

Starting from the north, the Yates Lanning Number 1 has produced 2.8 billion cubic feet of gas.

Then moving down to the Yates Vandiver "DO", it's produced 8.1 BCF.

The Yates Vandiver "CN" Number 1, which is in the same spacing unit as our proposed well today, has produced 12.4 BCF.

Then down to the Yates Vandiver Com Number 1, has produced 8 BCF.

And then the Fasken Brown-Yates, which is down in

Section 24, has produced 10.3 BCF.

On the east side of this thick I just described is another thick running parallel to it, and that is where we have proposed the Vandiver "CN" Number 2.

According to interpretation, a well drilled at the proposed location should encounter the axis of this other lower Morrow thick. The proposed well is expected to encounter about 90 feet of lower Morrow interval, which should contain at least one channel sandbody.

On the east side of this thick, the Yates Vandiver "AIM" Number 1, which was drilled in Unit E of Section 17 of 18-26, was completed in August of 1992. This well is also on the cross-section. It's on the far right of the cross-section.

Although the wellbore encountered only 48 feet of lower Morrow interval, within which there's only a 10-foot sand, this sand has already produced 1.8 BCF and is still currently producing almost 3 million a day.

South of the proposed location is the plugged and abandoned Fundamental Thorp-Sears Number 1, also in Section 18. It's in this same thick. This well is also on the cross-section on the left-hand side.

In this well the lower Morrow is 98 feet thick and contains within it several sands totaling 50 feet in thickness all together.

As can be seen on the cross-section, the lower Morrow sands were drill stem tested twice, and they had a rate up to 1.3 million cubic feet of gas a day, but the well was never completed because of successfully lower shut-in pressures, indicating possible uneconomic volumes of gas.

Also back on the cross-section, the working hypothesis is that the 10-foot sand in the Vandiver "AIM" Number 1 is connected to a substantially large distributory channel sand body, and the sands in the Thorp-Sears well are distributory mouth-bar sands, deposited further downstream and unconnected to the channel to the north.

The borehole to the "CN" Number 2, the proposed well, should encounter this thick distributory channel sandbody.

Q. What conclusions have you reached from the geological study?

A. Basically, we know of the thick to the west, which has had several good gas producers out of it, and we're wanting to drill the other thick on the east side, which we feel is a different sand, a different reservoir.

The Vandiver "AIM" Number 1, shown on the cross-section, you really have about four feet of crossover that's made 1.8 BCF. That sand has to be tied into a thicker sand somewhere, and we feel like the "CN" Number 2

location should encounter that thick.

Q. Yates will also be calling an engineering witness?

A. That's correct.

MR. CARR: Mr. Stogner, that concludes my examination of this witness, and I move the admission of Exhibits 3 and 4.

EXAMINER STOGNER: Exhibits 3 and 4 will be admitted into evidence at this time.

EXAMINATION

BY EXAMINER STOGNER:

Q. looking at your cross-section, the only proposed perforation is going to be the channel sand, or is that correct, in that lower Morrow clastic?

A. If we encounter that sand, yes. Now I'm sure, if we encountered other sands, that we would, depending on how they look, we would open those up too, possibly.

Q. Now, the Vandiver Com "CN" Number 1 over there to the west, what interval is it presently producing out of?

A. It is producing out of the lower Morrow clastics, but of a different sand from what is shown on the cross-section. It's a different sand, different reservoir. It's in a different thick, but it is within the lower Morrow clastics section.

Q. So this channel is unconnected; is that what

you're saying?

A. Yes, and engineering testimony can back that up with pressure data, which they will show.

EXAMINER STOGNER: Okay. I have no other questions of this witness at this time, Mr. Carr. I might have some later.

MR. CARR: At this time we would call David Boneau.

DAVID F. BONEAU,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. David Francis Boneau.

Q. Where do you reside?

A. Artesia, New Mexico.

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

A. I work for Yates Petroleum Corporation as reservoir engineering supervisor.

Q. Dr. Boneau, have you previously testified before this Division?

A. Yes, sir.

Q. At the time of that testimony, were your credentials as an expert witness in reservoir engineering

accepted and made a matter of record?

A. Yes, sir.

Q. Are you familiar with the Application filed in this case?

A. Yes, I am.

Q. Have you made an engineering study of the area that is involved in this Application?

A. Yes, sir, I've done that.

MR. CARR: Are the witness's qualifications acceptable?

EXAMINER STOGNER: They are.

Q. (By Mr. Carr) Dr. Boneau, let's go to what has been marked for identification as Yates Petroleum Corporation Exhibit Number 5. Would you identify that exhibit and review it for Mr. Stogner?

A. It's marked on the back, for some reason. It's a little map, you have in your hand.

Most of my testimony is aimed at the subject of simultaneous dedication, and we'll see that the Morrow reservoir that now produces in the Vandiver "CN" Com spacing unit, the production in the north half of Section 18, is from a Morrow reservoir that's practically depleted and that the target Morrow reservoir for the proposed Number 2 well is a completely different Morrow Channel that is probably connected to production out of the west half of

17.

Exhibit Number 5 attempts to show two or three things at one time.

First of all, the location of the proposed well is the yellow circle in the north half of Section 18.

Second, the Morrow spacing units that now produce have a company name associated with them, and that's the operator of the 320-acre Morrow spacing units that do now produce. And probably the only point from that is that you can see quite clearly that however you look at the proposed well, it's going to encroach upon Yates. And I think it actually encroaches more closely on the west half of Section 17, where Yates is the only working interest owner, so we're encroaching upon ourselves.

The third thing shown on this exhibit I've tried to indicate with some coloring on some of the gas well symbols. There are five gas well symbols that are colored purple, and we'll see in the pressure data that those five wells quite clearly appear to be in the same Morrow channel producing from the same reservoir. Those wells were drilled in the early 1970s, and that reservoir has produced like 40 BCF of gas, and it now has a pressure in the 200-pound range, at a very low pressure.

The green circle in the north half of Section 7 is the Lanning well, and it lies, from a geologic

standpoint, in that same thick as those purple gas wells. But the pressure data shows clearly that it's in a different Morrow reservoir.

And lastly, there's a gas symbol colored blue in the west half of 17, and that's the 1992-drilled Vandiver "AIM" Number 1 well. And we'll see pressure data on that indicates that it's clearly in a different channel than either the purple or the green wells.

So there will be some pressure data related to those seven colored gas well symbols.

Q. All right, Dr. Boneau, let's now go to Yates Petroleum Corporation Exhibit Number 6. Would you identify and review that?

A. Yes, sir. Exhibit Number 6 is a compilation of basic data on all 24 Morrow penetrations in these nine sections, and it's clearly not our intention to go through these 24 wells.

Our emphasis is on the seven wells where I think the pressure information tells us what's going on. Those seven wells, as a matter of record, are number -- What? 4, 6, 8, 11, 16, 18 and 19 on this Exhibit 6. And if there's a need to go back to some specific number for some well, it's probably on Exhibit 6. But I really think that's enough to say about Exhibit 6 right now.

Q. Let's go, then, to Exhibit Number 7.

A. Exhibit Number 7 is a graph that shows a summation of our pressure data, and it's really the basis of our testimony, the most important thing of our testimony.

Exhibit 7 is a plot of bottomhole pressure versus time for the seven wells that were colored in on Exhibit 5. Five of those wells mostly have purplish kind of colors, and they fit very well on the same S-shaped curve that extends from the upper left, goes down a big hill and is pretty flat along the bottom.

Those five wells are in the same Morrow Reservoir, as indicated by this pressure data.

The brown Yates well is the first well drilled. It had 3600 pounds. By the time the Vandiver Com and the Vandiver Number 2 well were drilled about a year later, the reservoir pressure had fallen about 3000 pounds. Then Yates drilled the Vandiver "CN" at about 2500 pounds. And by the time Yates drilled the Vandiver "DO", the reservoir was actually down to 1600 pounds. And by the end of the 1970s the whole reservoir had fallen to a pressure below 500 pounds, and it's stayed below 500 pounds, around 200 pounds.

And the production initially, this 40 BCF, most of it was produced in the Seventies. And those wells have made, you'll see, small amounts of gas since then. They're

just kind of limping along.

By comparison, the green triangles represent pressures measured at the Lanning "JC" well. That well was drilled in 1978 and -- at which time the purple well has already fallen below 500 pounds. The Lanning pressure was still 3400 pounds, and over the years it's declined relatively more slowly, down to a current value of about 1200 pounds.

So the green data clearly indicates a different reservoir than those five purple wells.

And then finally to the right are some blue Xs representing the data for the Vandiver "AIM" Number 1, and it's in another system. Those three points show that the pressure in that reservoir is declining, but they do not correlate with the pressures in any of the other wells.

And so the conclusion is, the five purple wells are in one reservoir, the Lanning is in a different reservoir, and the Vandiver "AIM" is in a third Morrow reservoir, all more or less at the same stratigraphic equivalent on the logs.

Q. If we go to Exhibit Number 8, does this exhibit just present in tabular form the pressure information shown on the graph on Exhibit Number 7?

A. That's correct. The same numbers involved, it's a lot easier to see on the plot than it is on the table.

Q. And what about Exhibit Number 9?

A. Exhibit Number 9 just shows the yearly production history of those same seven wells, and it fits in with the picture we've been given.

The five wells that I've been calling the purple wells began -- are the two wells on the left and the three wells on the right, and they began production in the Seventies. And you can see that, like the Vandiver "CN", produced 4.7 BCF in 1974. Those things had 90 feet of pay, and they really put out the gas in those times. But those five wells have kind of fallen off together, and two of them actually do not produce anymore.

There's also production yearly for the Lanning "JC", and you might note that the production for the Lanning has -- was never so -- as prolific as the Vandiver "CN"-type wells, but its production has held up a lot better. So it's acting like it's in a different reservoir, and the pressure indicates it's in a different reservoir.

And then finally, there's only two years of production under the Vandiver AIM, and it's produced 1.8 BCF in a short amount of time.

So the production data, the pressure data, all say that the original reservoir that the Vandiver "CN" Number 1 produced from was a big, fantastic 40-BCF reservoir. It's now at very low pressure and depleted, and

it's clearly not the target for this new well. If somehow we hit that reservoir with this new well, we have a total failure.

But the target is a different reservoir, so there's a reason that the wells could be simultaneously dedicated.

Q. In your opinion, is it necessary to drill the second well on this spacing unit to produce the reserves that remain under the north half of Section 18?

A. Yes, if there are reserves on the east half of the north half, yeah, east half of the northeast quarter of Section 18, you know, they have not been produced by the present well; there needs to be a well over there.

Q. And this well would be necessary to protect the correlative rights of the interest owners in the north half of that section?

A. Yes, sir, that's correct.

Q. In your opinion, does this fact create unusual circumstances which would justify simultaneous dedication of two wells on this spacing unit?

A. Well, what we really need is simultaneous dedication long enough to get a new well producing.

Q. What does the old well produce?

A. The old well produces 10 MCF a day or something, and --

Q. And what are Yates' long-term plans for this well?

A. And Yates' long-term plans are -- I think, obviously, are not to produce 10 MCF a day; they are to either abandon the well when this new well comes in, or to test some zones uphole and essentially abandon the well in this pool.

So within a reasonably short time, there will not be a need for simultaneous dedication of two wells in the Atoka-Morrow West Pool.

Q. But you have determined that you needed initially to assure that the lease will not terminate?

A. That's our position, yes, sir.

Q. Were Exhibits 5 through 9 prepared by you?

A. Yes, sir.

MR. CARR: Mr. Stogner, at this time we move the admission of Yates Petroleum Corporation Exhibits 5 through 9.

EXAMINER STOGNER: Exhibits 5 through 9 will be admitted into evidence.

MR. CARR: And that concludes my examination of Dr. Boneau.

EXAMINATION

BY EXAMINER STOGNER:

Q. Dr. Boneau, you said that this well was needed to

offset drainage in Section 17, but yet you pointed out that Yates is offsetting itself. How can --

A. Why are we doing this?

Q. Yeah.

A. Well, I think -- As I know it, the honest truth is that we have some partners in the north half of 18 who want this well drilled, and I think our geologists want it drilled just to see what's there.

Q. I take it those partners aren't in Section 17?

A. No, the west half of Section 17 is owned entirely by Yates. The north half of Section 18 is owned 70 or 75 percent by Yates and approximately a quarter by some other people. And some of those other people are the -- actually instigated the drilling of this well.

Q. Okay.

A. I think that's -- That's the story, as best I know it.

Q. How much more life in the Vandiver "CN" Number 1 do you anticipate at its present production rate?

A. A year or two. The well in that channel that's still doing quite well is in the south half of Section 7. That well is still making about 500 MCF a day, and it's got a year or two of real productive life, and then -- This milking a little bit out of it can go as long as you put your mind to doing that, but another year or two is plenty

long for these wells.

Q. Do you know if that Vandiver "AIM" Number 1 -- if its production rate for 1994 is going to be up there like 1993, or has it dropped off, or increased?

A. Let me see. It has not increased. It has dropped off a little, but not precipitously. It would be 20 percent less than that, or something like that, 20 percent less than 1993.

EXAMINER STOGNER: I have nothing further, Mr. Carr.

MR. CARR: We have nothing further in this case, Mr. Stogner.

EXAMINER STOGNER: Case Number 11,167 will be taken under advisement.

(Thereupon, these proceedings were concluded at 2:38 p.m.)

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CERTIFICATE OF REPORTER

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

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

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

WITNESS MY HAND AND SEAL December 26th, 1994.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11167, heard by me on 15 December 1994.

, Examiner
Oil Conservation Division