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. 10837

APPLICATION OF SANTA FE ENERGY
OPERATING PARTNERS, L.P.

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: David R. Catanach, Hearing Examiner

October 7, 1993

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on October 7, 1993, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, RPR, Certified Court Reporter No. 63, for the State of New Mexico.

I N D E X

October 7, 1993
Examiner Hearing
CASE NO. 10837

E X H I B I T S

A P P E A R A N C E S

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

FOR THE APPLICANT: HINKLE, COX, EATON, COFFIELD & HENSLEY
P.O. Box 2068
Santa Fe, New Mexico 87504
BY: JAMES G. BRUCE, ESQ.

EXAMINER CATANACH: At this time we'll call Case 10837.

MR. STOVALL: Application of Santa Fe Energy Operating Partners L.P. for an unorthodox gas well location.

EXAMINER CATANACH: Eddy County, New Mexico.

MR. STOVALL: Eddy County, New Mexico. You're right, that's where it is.

EXAMINER CATANACH: Call for appearances in this case.

MR. BRUCE: Yes, Mr. Examiner. Jim Bruce from the Hinkle law firm representing the Applicant. I have three witnesses, one of whom, Mr. Smith, has already been sworn.

EXAMINER CATANACH: Any additional appearances? All three of your witnesses have been sworn; is that correct?

MR. BRUCE: No.

EXAMINER CATANACH: Will the additional witnesses please stand and be sworn in.

MR. STOVALL: Anybody from Santa Fe who's going to testify today. Might as well. We'll get you all in at once.

(Witnesses sworn.)

MR. BRUCE: Mr. Examiner, could the record reflect that Mr. Smith has already been sworn and qualified as an expert landman?

EXAMINER CATANACH: The record will so reflect, Mr. Bruce.

CURTIS SMITH,

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

EXAMINATION

BY MR. BRUCE:

Q. Mr. Smith, once again, briefly, what is it that Santa Fe seeks in this case?

A. Santa Fe seeks --

MR. STOVALL: Excuse me, Mr. Bruce. Since it's a separate transcript, would you get his full name in the record.

Q. (BY MR. BRUCE) Could you please state your full name for the record.

A. My name is Curtis Smith.

Q. And you are a landman for Santa Fe Energy?

A. That's correct.

Q. Please continue, Mr. Smith.

A. Santa Fe Energy seeks approval of an unorthodox location to drill a Morrow well, the North Pure Gold "9" No. 2, to be located 660 feet from the

west line and 660 feet from the south line of Section 9, Township 23 South, Range 31 East, Eddy County, New Mexico.

Q. What is Exhibit 1?

A. Exhibit 1 is a land plat showing the proration unit, well location, and the offsetting operators for the North Pure Gold "9" No. 2.

Q. Does Exhibit 2 list those operators?

A. Exhibit 2 lists the offset operators.

Q. The only operators listed are Santa Fe Energy and Yates Petroleum; is that correct?

A. That's correct.

Q. What is Exhibit 3?

A. Exhibit 3 is my notice affidavit with the letters attached.

Q. Okay. Now this attachment to your letter lists a number of companies other than Santa Fe and Yates. Who are those companies?

A. Referring to Exhibit 1, the north half of Section 17, Santa Fe is the operator of the Pure Gold C-17 No. 2. The working interest owners in the North Pure Gold C-17 No. 2 were notified. Since we operate that well, we felt it fair to notify our working interest partners in that well.

Q. In the east half of Section 8, there's a

Santa Fe-operated well. Who are the working interest owners in that well?

A. Mitchell Energy.

Q. So they were notified of the application as well?

A. That's correct.

Q. In your proposed No. 9 well, besides Santa Fe Energy, who are the working interest owners?

A. Mitchell Energy.

Q. What is Exhibit 4?

A. Exhibit 4 is a letter from Yates Petroleum, and attached to that is my letter to Yates Petroleum requesting a waiver of the 20-day notification and a waiver of objection to this unorthodox location. They responded with their letter dated October 6.

Q. This is a result of your office forgetting to send out the notice?

A. This was an oversight on my part on notifying Yates as an offsetting operator, being the north half of Section 16.

Q. Your well is actually not moving any closer to the Yates acreage to the south; is that correct?

A. Our well is still 660 feet from the south boundary.

Q. What is the cost of your proposed well?

A. The cost of the proposed well is $1,300,000 for dry hole cost; $1,634,000 for completed well cost.

Q. Does Exhibit 5 contain approved copies of the AFE from Santa Fe and Mitchell Energy?

A. That's correct.

Q. Were Exhibits 1 through 5 prepared by you or under your direction?

A. That's correct.

Q. And, in your opinion, is the granting of this application in the interest of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I tender Santa Fe Exhibits 1 through 5.

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

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Smith, has this well been drilled?

A. No, sir.

Q. The working interest ownership you said in the north half of Section 17 is different from the south half of Section 9?

A. That's correct.

Q. And the same is true for the east half of

Section 8?

A. No. The working interest owners in the east half of 8 and all of Section 9 is common, as well as the royalty ownership. We have one base lease that covers Sections -- east half of 8 and all of Section 9. And Santa Fe and Mitchell are the working interest owners for that common area.

Q. And you've notified the working interest owners in the --

A. North half of Section 17.

EXAMINER CATANACH: I think that's all we have. The witness may be excused.

MR. BRUCE: Call Mr. Seiler to the stand.

ROBERT SEILER,

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

EXAMINATION

BY MR. BRUCE:

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

A. My name is Robert Seiler.

Q. Who do you work for?

A. Santa Fe Energy.

Q. In what capacity do you work for Santa Fe?

A. Geologist.

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

A. I have.

Q. Were your credentials accepted as a matter of record?

A. Yes, they were.

Q. Are you familiar with the geological matters involved in this application?

A. Yes.

Q. And your area of responsibility includes this prospect?

A. Yes, it does.

MR. BRUCE: Mr. Examiner, I tender Mr. Seiler as an expert geologist.

EXAMINER CATANACH: Mr. Seiler is so qualified.

Q. (BY MR. BRUCE) Referring to Exhibit 6, Mr. Seiler, would you discuss the zones of interest in this area?

A. Exhibit 6 is a production map. The production on there is cumulative to the date 4-1-93.

I would like to point out two things about the map. Typically, as most people do, the colors represent the various producing horizons. In this case, we are most interested in the Morrow. So as you

can see on the legend on the bottom, the Morrow wells are colored red, Morrow-producing wells.

The other symbology is the shape of the figure around the wellbore and the well location indicates the depth of penetration. Therefore, for instance, the upside-down triangles, if you will, most of them colored orange, are only Delaware depth. They're actually TD'd in the Bone Spring. They do not go to the Morrow.

The well, the critical control for our proceeding today are the circles which are wells that were drilled to the Morrow depth.

I would also like to point out that some of the wells have two colors on them. Some are half-red and half-bluish or purple color. The bluish or purple color is the Atoka formation. So some of them did produce in the Morrow. Now they're in the Atoka or vice versa.

Lastly, I guess I'd point out the line of cross-section labeled A-A', which will be the next exhibit.

Q. Let's move on to Exhibit 7 and discuss your cross-section.

A. Exhibit 7 is cross-section A-A'. It is for the portion of the stratigraphic section that is the

upper portion of the Morrow.

As you can see, the first line from the top is labeled the top of the Morrow. Also highlighted are two sands. One, the upper one called the Pure Gold Sand, a local name that we've adopted. And then the lower sand highlighted is the Poker Lake Sand used by a lot of operators through there.

Indicated along the line of section are the four wellbores that are shown on the production map. And we'd like to point out the perforated intervals in each wellbore, you can see which sands are completed, currently completed, or were in the various sands. And those that do not have perforations, of course, are still behind pipes such as the well third from the left called the Santa Fe North Pure Gold 8. That well is currently only in the Poker Lake Sand and the Pure Gold Sand is behind pipe.

Q. What is the current status of the Yates Petroleum well?

A. The Yates Petroleum Medano "VA" State #2 was a producer in the Poker Lake Sand and has now been recompleted in the Delaware. That's indicated also on the production map where the circle is half red and half orange.

Q. Would you move on to your Exhibit 8 and

discuss the Poker Lake Sand in a little more detail?

A. Exhibit 8 is an isopach map of the Poker Lake Sand. It is called a net clean sand picked from a gamma ray. And using this exhibit in conjunction with the cross-section, one can see that the first two wells from the left have zero feet of net clean sand of Poker Lake, and that indeed is established on the cross-section.

The well in Section 8, which is our North Pure Gold 8 No. 1, has 20 feet of the Poker Lake Sand and is currently completed in that sand. The cross-section then shows it goes to the proposed location, and then on down to the Yates well. And you can see the Yates well has 13 feet of this sand, and, as I mentioned, was originally completed in the sand but the completion -- the production did not hold up and has since been recompleted.

The sand body, as one can see, is roughly a north-south linear sand body is our interpretation, more than likely a fluvial-type sand deposit reaching maximum thickness at 20 or just above 20 feet by the well control.

I'd like to point out that the proposed location for our requested unorthodox well being labeled the No. 2, Well No. 2 in Section 9, would

encounter, approximately by the mapping 10 feet of the sand. And if this well were to be drilled at an orthodox location, being 1980 off the end line of that 320-acre proration unit, we would be virtually at zero or outside the sand body. Hence, our request for the unorthodox location.

Q. And you have pretty good well control in this immediate area, don't you, Mr. Seiler?

A. Particularly in the immediate area where the proposed location, requested proposed location is located with the Yates well to the south having -- actually, two Yates wells to the south having the sand, and then our well up in Section 8 having the sand, and then the negative control, if you will, the zero wells in the proximity of that location. I think I would characterize this as fairly well controlled, yes.

Q. Would you move on to your Exhibit 9 and discuss the Pure Gold Sand?

A. Okay. Exhibit 9 is a similar type of map, being a net clean sand map once again. And this is of the Pure Gold Sand. Pure Gold Sand we feel is quite a different sand. It attains greater thicknesses. As one can see again in the well in Section 8, North Pure Gold 8 No. 1, the sand achieves a thickness of 35

feet. One will note on the map that that well is not colored red, and again that is because that zone is still behind pipe as that well is completed in the lower zone of the Poker Lake.

More specifically, too, the shape and all of the sand, I believe that this sand is more of a bar or a composite bar geometry, the sand again achieving thicknesses of 35 feet or actually down to the south in Section 20 up to 41 feet.

Control, once again, is virtually identical. And we see that in the Yates well to the south, this sand was not present, the Yates Medano VA No. 2. We had 35 feet in ours, and, once again, we were requesting the unorthodox location to achieve a greater thickness of this potential sand body.

Admittedly, we would be able to encounter this sand by the mapping -- we would be able to encounter the sand body at an orthodox location. However, it would be of obviously thinner -- by the map, obviously a thinner deposit, and we feel we have to maximize our objectives here and obtain the maximum benefit by getting into the thickest part of the deposit that we can.

Q. This area, looking at your production map, is also prospective in the Delaware, isn't it, Mr.

Seiler?

A. That's correct. Referring back to the production map, Exhibit 6, again, one will notice all the orange upside-down triangles, and this is a rapidly developing Delaware field. And we believe that the location in 9, No. 2, would be very prospective in the Delaware. As you can see, some of the completions are quite recent, and all we were able to put down were the initial potentials.

For instance, the No. 17 well of Yates in Section 16 immediately south of our proposed location had an initial potential of 312 barrels.

Our No. C-17 No. 5 in the northeast northeast of Section 17, which would be the diagonal offset of the unorthodox requested location, had an IP of 354 barrels. And so, therefore, we think this is very prospective in the Delaware and think this is important to us to again stack our objectives, considering we're about to, if granted, we would be drilling -- risking $1.6 million. We feel it's important to stack the objectives.

Q. As to the Delaware, this would be a standard location?

A. That's correct. Asking 660-660 off the west and south, and that would be a standard location

in the Delaware on 40's.

Q. By drilling this well, would it help prove up the north half of Section 9?

A. We feel, yes, it would be an important step. And if this well works in the Morrow in either of the two sands that we've discussed, being the Poker Lake or the Pure Gold, we would then have the opportunity to consider drilling another well in the north half of Section 9, and would come back to the Commission, more than likely, and ask for another unorthodox location to the north so that we could again get another well in the two Morrow sand bodies. And, therefore, I'd have two Morrow productive wells in Section 9.

Q. What is Exhibit 10, Mr. Seiler?

A. Exhibit 10 is a structure map. The datum for the structure map is a common datum that's used in the area. It's top of the lower Morrow. It's an excellent log marker that is beneath the depth of the cross-section. However, I think most operators readily identify and use that marker.

What the structure map shows is basically a nosing across the general area, and it's fault-bounded, we believe, on the southwest that's seismically controlled. But in the vicinity of our

proposed location, unorthodox proposed location, one can see that we would obtain a little bit of structural advantage by going to the 660-660 from the south and west location, being a little higher position on the nose, and, once again, feeling that this would give us a little more advantage in stacking our objectives and having structural advantage for what we consider a reasonably high risk well in the Morrow.

Q. Were Exhibits 6 through 10 prepared by you or under your direction?

A. Yes, they were.

Q. In your opinion, is the granting of this application in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 6 through 10.

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

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Seiler, is structure important in this play?

A. Typically, it is not a major component. One does notice, if you can catch these sands on the highs, they are somewhat better wells. Our well in Section 8 is an excellent well in the Poker Lake. It held up real fine, whereas by comparison, the Yates well in 16 started out wonderfully. Initially, I think it had an IP of over 3 million a day but fell off fairly rapidly. The reasons I don't know, but I do know the higher well on structure did better. So it has an assisting component, if you will, but normally not crucial or critical.

Q. Is there water production in this reservoir?

A. No. It's kind of a strange beast. I don't know -- somehow the permeability is better higher on structure, whatever it is, but water does not appear to be a problem in the Morrow.

Q. What pool is this, do you know?

A. There are several pools in here. There's the Sand Dunes West. There's the Medano -- sorry -- Las Medanos, Morrow. It would fall in one of those two, I think.

Q. You've mapped these sands just based on well control in the area?

A. Yes, sir.

Q. Is there a significance, say, on the Poker Lake Sand to the 10 feet and the 20 feet cutoff that you've got colored in there?

A. No. It's kind of a sales tool we use in our company where we're showing our management. Just to show where the thicker, sweet spots are, we typically highlight with the yellow. There's really not -- it just shows the edges, if you will, the orange highlights the edges.

Q. What control are you using on the east side of that trend there?

A. On the Poker Lake?

Q. Yes.

A. Okay. Basically, you have, if you will, uniform contour spacing where you have the control, and you carry it, project that, if you will. And as you go to the north in Section 4, we have -- looking at the Poker Lake Sand, for instance, we have a well up there that had zero. And then also if you look up in Section 6, there's a well No. 7 that also had zero. And I basically just projected it more or less equally between those two zero points.

Q. Then you've got the well down in Section 16 that had three feet?

A. Yes, which helped set up, if you will, the

contour spacing.

Q. And you basically did the same procedure in the Pure Gold Sand?

A. Correct.

Q. Is the Pure Gold the most prolific sand in the area?

A. To date. However -- that is correct. However, I think the Pure Gold Sand development in the 8 No. 1, that's the well in Section 8, today is untested, and I think it may prove to be quite good.

Highlighted on the cross-section, I should have pointed out, I guess, in red, the area shaded in red is the footage of 10 percent density porosity or greater. And you can see that the two sands are quite similar in that North Pure Gold 8 No. 1 on the cross-section.

Q. You said that's still behind pipe in that well?

A. Correct, correct.

Q. Do you propose to perforate both zones in your new well?

A. I think we would probably do the same as we've done in the 8 No. 1. And that is if we get a satisfactory well in the lower sand, and it has and maintains a sufficient rate, then we would stay in

that until such time as the rate dropped off and pressures warranted and so on.

EXAMINER CATANACH: I have nothing further.

MR. STOVALL: Nothing from me.

EXAMINER CATANACH: The witness may be excused.

RANDY OFFENBERGER,

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

EXAMINATION

BY MR. BRUCE:

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

A. Randy Offenberger.

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

A. I work for Santa Fe Energy Resources as a petroleum engineer.

Q. Have you previously testified before the Division?

A. Yes, I have.

Q. Were your credentials as an engineer accepted as a matter of record?

A. Yes.

Q. Are you familiar with the engineering matters related to this application?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Offenberger as an expert petroleum engineer.

EXAMINER CATANACH: The witness is so qualified.

Q. (BY MR. BRUCE) Mr. Offenberger, what are you going to testify about today?

A. I want to testify today about a drainage study which reflects inadequate draining by the offset wells in Section 8 and also Section 16 where an additional well is necessary up in Section 9 to further drain the reservoir.

Q. Okay. Would you refer to your Exhibit 11 and discuss for the examiner its contents.

A. Exhibit 11 is a summary of my drainage study that I performed. The table itself shows the two wells, the first well being the Santa Fe Pure Gold 8 No. 1 well which is located in the southeast quarter of Section 8. The second well that I want to focus on is the well in Section 16 which is the Yates Medano "VA" State #2.

Going back to the North Pure Gold 8 No. 1, it's currently completed in the Poker Lake Sand. The interval is 13,966 to 86. We've got 20 foot of net pay in the wellbore. We've got 12 percent porosity,

estimated 25 percent water saturation, and a bottom hole pressure initially in the well of 6781. Bottom hole temperature is 595. Initial gas volume formation factor is 403. That calculation equates to 1580 Mcf per acre-foot in the reservoir.

Going down to the bottom of that column, we've got a cumulative production from that well to date through 5 of '93 of 1486 million cubic feet.

Our estimated ultimate recovery from that well based on decline curve analysis is 3059 million.

Going back and calculating the drainage area affected by the ultimate recovery from that particular well indicates that well will drain 107 acres of reservoir.

Q. As a result, would you expect any adverse effect on the offset acreage as a result of drilling the proposed well?

A. No.

Q. Now, what sand are you calculating this drainage radius?

A. This sand is the Poker Lake Sand.

Q. Would you anticipate similar drainage in the Pure Gold Sand?

A. Yes, I would.

Q. Without going into detail, what does the

Yates well drainage show?

A. The Yates well didn't perform quite as well. That drainage study or drainage calculation shows approximately nine acres of drain from that wellbore. Its ultimate recovery is 168 million. It has been recompleted to the Delaware formation in April of this year.

Q. In your opinion, is the granting of this application in the interest of conservation, the prevention of waste?

A. Yes.

Q. Was Exhibit 11 prepared by you?

A. Yes, it was.

MR. BRUCE: Mr. Examiner, I tender Exhibit 11 for the record.

EXAMINER CATANACH: Exhibit 11 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Offenberger, you stated that you thought it would be similar producing characteristics in the Pure Gold Sand. What do you base that on?

A. On the production characteristics we've seen so far on the recompletion of the Pure Gold C-17 No. 2 into the Pure Gold Sand, its producing

characteristics are similar to what we're seeing in the well in Section 8.

And we also performed a preliminary drainage study on that particular well in the Pure Gold Sand, and it will probably ultimately drain 90 acres.

Q. In the No. 1 well?

A. The C-17 No. 2, which is located in the northeast quarter of 17.

EXAMINER CATANACH: Okay. I have nothing further. The witness may be excused.

Anything further, Mr. Bruce?

MR. BRUCE: Nothing further in this case, Mr. Examiner.

EXAMINER CATANACH: There being nothing further, Case 10837 will be taken under advisement.

CERTIFICATE OF REPORTER

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

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

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

WITNESS MY HAND AND SEAL, October 16, 1993.

Deborah O'Bine

DEBORAH O'BINE
CCR No. 63

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

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10437, heard by me on October 7, 1993.

David R. Catanach, Examiner
Oil Conservation Division