STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

3 August 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Pennzoil Exploration & Production Company for an unorthodox oil well location, Lea County, New Mexico. CASE 9449

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Robert G. Stovall
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico

For Pennzoil: W. Thomas Kellahin
Attorney at Law
KELLAHIN, KELLAHIN & AUBREY
P. O. Box 2265
Santa Fe, New Mexico 87504

For LDM and Nearburg Producing Company: Scott Hall
Attorney at Law
CAMPBELL & BLACK, P.A.
P. O. Box 2208
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

MR. STOGNER: Call next Case Number 9449.

MR. STOVALL: Application of Pennzoil Exploration and Production Company for an unorthodox oil well location, Lea County, New Mexico.

MR. STOGNER: Call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin, Kellahin & Aubrey.

I'm appearing on behalf of the applicant and I have one witness to be sworn in this case.

MR. STOGNER: Are there any other appearances in this matter?

MR. HALL: Mr. Examiner, Scott Hall from the Campbell and Black law firm on behalf of LDM and Associates and Nearburg Producing Company.

MR. STOGNER: Are there any other appearances?

Do you have any witnesses?

MR. HALL: No, sir.

MR. STOGNER: Will the witness please stand and be sworn at this time?

(Witness sworn.)

MR. KELLAHIN: Mr. Examiner, my witness in this case is a geologic expert. His name is Jim Barr. He spells his last name B-A-R-R.

JIM L. BARR,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Barr, for the record would you please identify yourself and describe for whom you work and in what capacity?

A My name is Jim L. Barr. I'm Senior Explorationist for Pennzoil Exploration and Producing Company of Houston, Texas.

Q Mr. Barr, have you previously testified on behalf of your company with regards to Shipp Strawn production and exploration in Lea County, New Mexico?

A Yes, sir, I have.

Q As a geologic expert have you made an investigation of the geology and have you reached certain conclusions and recommendations concerning this application by Pennzoil?

A Yes, I have.

MR. KELLAHIN: Mr. Examiner, we tender Mr. Barr as an expert geological engineer.

MR. STOGNER: Mr. Barr is considered qualified.

MR. KELLAHIN: Mr. Examiner, I apologize that I've neglected to bring a larger display that shows this well in relation to other Shipp Strawn development, and I will attempt to have Mr. Barr locate this for us verbally.

Q Would you take a moment, Mr. Barr, and orient us as to where this particular unorthodox well location is in relation to other Shipp Strawn development?

A This well is in Section 1, Township 17 South, 37 East, and it's approximately, I would say, about four miles east of Lovington, New Mexico. It is due east of production in Section 3 of the Pennzoil No. 1 Byers, the Pennzoil No. 2 Waldron, the Pennzoil No. 1 Byers, which is in the Shipp Strawn field there, and that would be the west of this map by one section.

Producible zones in the area by Sohio, just to the northeast of us they have production there. It, I take it, is also in the Shipp Strawn Field there.

We're north of the Humble City Field about three, four miles.

Q You are currently beyond the eastern

edge of the current development in the Shipp Strawn Pool?

A I believe so. We're on the eastern edge of it.

Q When we look at your Exhibit Number One, orient us to what was we're seeing. Where do we find the outlines for Section 1 itself?

A Section 1 is. you'll see in the upper righthand corner up there below T 16 South, you'll see the 1. That is the full section. Since we're dealing with individual mounds here, we're gone to a scale of one inch is equal to 1000. That is the full section. That under color, the yellow and the green together, is actually the west half of the full section and they are subsequently divided into 80-acre units.

Q Within the Section number 1 there is currently existing a well in the west half of the northwest quarter of Section 1.

A This is correct. That's the Pennzoil No. 1 Price Family Trust, which was recently completed as a top allowable well.

Q When we look at the working interest ownership in Section 1 and look at the west half of the section, are we dealing in a portion of this section in which Pennzoil is the operator?

A Yes. Pennzoil is operator in the north

west quarter as well as the southwest quarter.

Q And do you operate the Price Family Trust No. 1 Well?

A Correct. We do operate that well.

Q Would you describe for us what are the geologic facts of significance that you have interpreted from information derived from the Price Family Trust Well?

A What we have here is a -- let me explain this map here is an isopach map of the Lower Strawn Lime, and in this particular area, I might add across the Lovington - Shipp area, the Lower Strawn Lime increases in thickness from west to east and in this particular area we have right here, the Lower Strawn Lime itself averages around 200 feet thick. It is in those areas that we use seismic to delineate and detect the mounds. We look for the abnormal thickening of the Lower Strawn Lime, and in this particular case our seismic, which is defined by three -- I have three thin lines on here, these are traces of seismic line, not the full trace, but it's the traces of seismic that refer to this particular map, and it is through the seismic that we identify the mounds. Subsequent drilling such as the No. 1 Price Family Trust, shows us that we do have a mound and it can be used with the geological data that we have from the well itself, we appropriate (sic) that in the seismic and further define and delineate these mounds. They

are not ubiquitous over the whole area. They occur as individual mounds. They occur in clusters of mounds, and this is why we have put the seismic on here, is to show you that we are delineating this particular mound in the direction that we want to have this location that we're applying for.

Q Pennzoil was the company as operator that drilled and discovered the production for the Shipp Strawn Pool, were they not?

A Yes, sir.

Q And that discovery well was what?

A That was, let's see, it was the Pennzoil No. 1, let's see, the Pennzoil No. 1 Shipp 4, right here in Section 4.

Q And subsequent development in the Shipp Strawn Strawn has resulted in the drilling of approximately how many Shipp Strawn wells, do you know, Mr. Barr?

A Let's see, I did a deal on this not too long ago. There are something like 18 wells; most of those have been in the last about five years.

Q The spacing in this pool is 80-acre spacing?

A Correct.

Q And, of course, standard well location within an 80-acre spacing unit, where must that well be

located?

A It must be within the quarter quarter section within 150-foot radius of the center of that governmental section.

Q Within the Shipp Strawn Pool are there numerous unorthodox well locations?

A Yes, as I can see on my map, and through the hearings, yes, there are.

Q When we look at the development that's occurred as shown on the display, Exhibit Number One, identify for us the sequence in which these wells were drilled.

A Okay. The first well on this exhibit, it was the Amerind No. 1 State MTS.

Subsequent to that was the Sohio No. 1 State 2; Sohio No. 1 State 2; Sohio No. 1 State 35; and then the Price Family Trust No. 1.

Q What is the basis upon which you have recommended to your company that they drill at the unorthodox location within the spacing unit defined as the west half of the southwest quarter?

A We've taken information gained from our preliminary seismic investigation over the area. We've incorporated that with the geological information, primarily the logs, and for information from the Pennzoil No. 1

Price Family Trust. We've integrated the two and we've come up with the location that we've selected to the south of the No. 1 Price Family Trust.

Q Do you and other operators in the Shipp Strawn Pool encounter difficulty in developing and producing spacing units within the confines of a standard well location for that spacing unit?

A Yes, we do encounter problems. Unfortunately nature didn't grow the mounds within an 80-acre spacing. They do overlap.

Q What is the optimum location then within the west half of the southwest quarter, in your opinion, from which to test and develop the Shipp Strawn production underlying that spacing unit?

A The most optimum location would be 2310 feet from the south line and 810 feet from the west line.

Q What's the basis for that opinion, Mr. Barr?

A This is based upon the, primarily on the two seismic lines. You see a line running through the proposed location that runs northwest/southeast, and we also have a seismic line that runs to -- that's tangent to the green circle of the proposed location that runs north-south.

Q Within the contours shown on the display

what is the importance to you as a geologist in being at a certain thickness in the Shipp Strawn reservoir?

Q As we can see on this map, Amerind had a well over 233 feet thick which was a dry hole.

We're trying to go for the maximum thickness that we can in order to, hopefully, get the mound core, and we're really trying for at least 240 feet here. Seismic can't tell us the thickness but it can show us the outline and this is what it's showing us: They're very sharp, they're steep on the side, they've been marked by the subsequent (unclear) and burial, but we still feel that if we can get at least the 240 feet, we'll have a very good chance of hitting the mound complex itself, the core.

Q Does Pennzoil as operator and the other working interest owners or royalty owners with regards to the subject spacing unit, gain any unfair advantage over any other spacing unit as a result of the unorthodox location?

A I don't think so.

Q And why not, sir?

A All we're trying to do is develop this particular mound and we're only encroaching upon ourselves here.

MR. KELLAHIN: That concludes my examination of Mr. Barr, Mr. Examiner.

We would move at this time the introduction of his Exhibit Number One.

MR. STOGNER: Exhibit Number One will be admitted into evidence at this time.

Any questions of Mr. Barr?

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Barr, you said seismic work was done or utilized.

A Utilized.

Q Was that Pennzoil's seismic work or was it done by somebody else that you had purchased?

A The seismic that we do. It's proprietary seismic in terms of the acquisition and the processing.

Q And how many lines are we talking about that was run in this general vicinity that you were able to draw this mound in?

A I've only put three of the lines on here and they --

Q Are those those lines in blue ink?

A Yes, sir, very light. Unfortunately I forgot to put them on when I prepared this map and Mr. Kellahin refreshed my memory last night, so I put on the

three important lines because they are pertinent to this location but there are other lines within the area, yes, to the east, to the west, and some of them run north/south and some run east/west.

Q Was the seismic work done after the No. 1 Price Family Trust Well?

A No, these, these lines here, these three lines here were done prior to the drilling of the No. 1 Price Family Trust and it is on those seismic lines that we picked the initial location because that was the optimum location for that mound and the subsequent delineation by the seismic bounded by the proposed location makes that the optimum location for that 80-acre spacing tract.

Q Has there been any evidence of a gas-water contact?

A In this well, no. We have not encountered any water contact and we have not encountered any delineation of a gas contact in here.

We do have two wells that we drilled last year and the early part of this year that are north of here that we did encounter water. We had a mound up there but they were wet.

Q In your opinion what is the limit of the production from this particular mound in correspondence with an isopach line?

A That is a very difficult question to answer because the reservoir -- I can contour, generalize and simplify the isopaching of the porous Strawn lime; however, a reservoir with any mound or any reef complex is highly irregular and we could very well have risk. Even though we show an optimum location here we have a very high risk in this particular location, as you will see in the subsequent case that's to follow here, 9450, in which case we have a very similar situation. We thought we would have a good well and it was dry.

So it's very difficult to really delineate the reservoir itself in this area. They're highly irregular. Only the isopaching can be simplified. This is very -- I mean it's very simplistic, at best.

We hope that the reservoir does extend to the location, is what we're hoping.

Q Did you take into consideration that Amerind No. 1 State MTS Well directly to the west, as far as being a portion of this mound? Now you show it to be in the general area but segregated from this particular mound.

A It could be an isolated satellite mound or it could be part of the mound itself. As I understand from the Amerind well, it did have the mound facies in it. It had no permeability.

They did attempt, as I understand, two

DST's over the particular interval and it just had no permeability at all. It could be part of the mound complex or it could be a satellite little mound off to the side of it. And I think this is exemplified by some wells to the west of here drilled by Union Texas Petroleum, and their Union Texas No. 3 in Section 34, 16 South, 37 East, they're in a complex there which has the Myers No. 2 and the Waldron No. 2, Pennzoil wells, that well produces very well.

Their No. 3 Well in the same section has water in it. It's for all practical purposes a well that is depleted, and if you drew an isopach it would look like it's in the same mound, but it is a completely separate reservoir.

And so this is why I showed the Amerind No. 1 MTS as being outside of this complex.

Q Now you show some yellow marks, or 80-acre prorations --

A Right.

Q -- in yellow --

A Right.

Q -- to the east. Are those presently producing or drilling or are those just proration units?

A They're just -- this is Pennzoil's procedure for showing their land positions.

Q In your experience out here, if produc

tion was encountered in this well, would that production necessarily follow, say, the contour line of 220 all the way around as being producing or would that be giving and take to a certain degree, or could we see nonproduction within the top of this mound to the west of your Number One Price Federal (sic) trust?

A I think in this particular case here the question you're trying to ask is that we'd have to show -- somehow include the Amerind well into the complex, and we see here in the Amerind well 233 feet, it was dry, so we do not have reservoir where we have a 233-foot thickness, so we're trying for 240 or 240+ and we would like to see maybe that -- what we would like to see and what we've seen experiencewise, a typical well will have a thicker mound facies, will generally have a better reservoir potential.

Q So it would follow the 240.

A We hope, hope it would be larger.

Q If production was encountered at 240 would correlative rights, in your opinion be violated in Section 2, or over there to the east in those two immediate standup 80-acre proration units?

A I don't think it would be violated at all. I think they'd be protected.

Q Now does Pennzoil own all the west half of Section 1?

A We have 100 percent working interest in the southwest quarter and we have 93 percent working interest in the northwest quarter.

Q 93 percent?

A 93. some odd percent. There's supposed to be land plat here --

Q Okay.

A -- but unfortunately I don't have it here.

Q So common ownership throughout -- well, there again I'll wait and ask your landman that question.

MR. STOGNER: I have no further questions of Mr. Barr.

MR. KELLAHIN: I don't have a landman here.

My understanding is that Amerind has the balance of the interest in the northwest quarter.

A Yes.

MR. KELLAHIN: And makes up the last 5 or 6 percentage of that working interest share in the northwest quarter.

When we move to the southwest quarter, that's all Pennzoil.

So the only other operator,

participant, working interest owner to participate in the west half is going to be Amerind.

MR. STOGNER: I'm sorry, I misunderstood you.

MR. KELLAHIN: Well, we didn't make it clear. I'm sorry.

MR. STOGNER: Is it your opinion that the No. 1 Price Family Trust Well is draining from the southwest quarter of this section?

A Should I defer that to you?

MR. KELLAHIN: If you can answer it, you can answer it.

A I think that it could be possibly draining from the southwest quarter. We're still trying to understand how these mound wells do drain and I think in order to protect that southwest quarter, though, we need to drill that well, so we will protect correlative rights.

MR. STOGNER: Okay, I have no further questions of Mr. Barr.

Are there any other questions of this witness?

He may be excused.

I'm sorry, Mr. Kellahin?

MR. KELLAHIN: Mr. Examiner, Exhibit Number Two is our certificate of notification to

the other potentially interested parties. I think I have given you a copy of the certification.

We have nothing else to present in this case, Mr. Examiner.

MR. STOGNER: Is there anything further in Case Number 9449 at this time?

This case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C. S. R. DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9449, heard by me on 3 August 1988.

Oil Conservation Division, Examiner