STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
13 June 1983

EXAMINER HEARING

IN THE MATTER OF:

Application of TXO Production Company for an unorthodox location and a nonstandard proration unit, Lea County, New Mexico. CASE 7895

BEFORE: MICHAEL E. STOGNER, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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I N D E X

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E X H I B I T S

MR. STOGNER: Call next Case Number 7895.

MR. PEARCE: That case is on the application of TXO Production Company for an unorthodox location and a nonstandard proration unit, Lea County, New Mexico.

MR. DICKERSON: Mr. Examiner, I'm Chad Dickerson of Artesia, New Mexico, on behalf of the applicant.

We have two witnesses.

MR. KELLAHIN: If the Examiner please, I'm Tom Kellahin of Santa Fe, New Mexico, appearing in opposition to the applicant on behalf of Maurice L. Brown.

I have two witnesses.

(Witnesses sworn.)

JOHN R. TARBOX,

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

DIRECT EXAMINATION

BY MR. DICKERSON:

Q Will you state your name, your occupation,

and where you reside, please?

A. My name is John R. Tarbox. I'm a geologist for TXO Production Corp. in Midland, Texas.

Q. Mr. Tarbox, will you briefly summarize your educational background for the examiner?

A. I attended Southern Methodist University from 1978, graduating in 1982; receiving a Bachelor of Science degree in economic systems analysis and a Bachelor Science degree in geology.

Q. And what has been your employment history since your graduation, Mr. Tarbox?

A. Upon graduation I started working for TXO Production Corp. in Midland, and worked there since that time.

Q. And what do your duties involve insofar as the land surrounding this application is concerned?

A. I've been a geologist in charge of New Mexico for the entire period of my employment.

Q. Do you have any drilling experience with wells in the vicinity of this Vada-Penn Pool?

A. Yes, sir, I completed a well just last week approximately six miles north of the proposed location.

Q. And are you familiar with the production and performance history of the wells in this pool?

A. Yes, sir.

Q. Are you familiar with the application which TXO has filed in this proceeding?

A. Yes, sir.

MR. DICKERSON: Is the witness considered qualified, Mr. Examiner?

MR. STOGNER: The witness is considered qualified.

Q. Mr. Tarbox, would you very briefly state the purpose of TXO's application?

A. In 1968 Order 3179-B established 160-acre spacing for the Vada-Pennsylvanian Pool of Lea and Roosevelt Counties, New Mexico, and also provided that wells should be located within 150 feet of a governmental quarter quarter section in this field.

TXO is requesting an exception to the spacing rule, that a one-well io-acre exception be granted.

Q. And an unorthodox location as well?

A. Yes, sir, and an unorthodox location, a well to be located 660 feet from the north line and 2615 feet from the west line, Section 17, Township 10 South, Range 34 East.

MR. DICKERSON; Mr. Examiner, I might point out thatthe application originally filed here sought a nonstandard proration unit consisting of 160 acres,com-

posed of the east half of the northwest quarter and the west half of the northeast quarter.

Subsequently an amended application was filed which we're here upon today, which requests an exception to the 160-acre well requirement with this proposed well location to be the east half of the northwest quarter to be dedicated to that well.

MR. STOGNER: Thank you, Mr. Dickerson.

MR. DICKERSON: And in the event that the Division feels that there's any further necessity for republication or anything of that nature, we would ask that our testimony here today just be taken and held open subject to any further objection.

Q. Mr. Tarbox, is there any precedent for 80-acre development in this Vada-Penn Pool?

A. Yes, sir. On March 3rd, 1982, Order Number NSP-1291 was granted to Mr. Robert L. Thornton for development of the Vada Pool on an 80-acre proration unit.

Previously Case 6527, Order No. R-6000, and Case 7091, Order No. NSP-1218 provided for the same section.

Q. Mr. Tarbox, would you briefly summarize the nature of the geology of this subjective Bough C formation?

A. The Bough C is a limestone, Pennsylvanian

in age, which stratigraphically traps production in the area. It consists of a series of generally southeast dipping phylloid algal mounds. Lithology is tan to white biosparite with good primary and secondary intercrystalline and vuggy porosity, grading into a tan to gray biomicrite with poor intercrystalline and vuggy porosity.

Production in the area is controlled locally by a degree of porosity development.

Q. Mr. Tarbox, have you prepared certain exhibits upon which you intend to rely?

A. Yes, sir, I have.

Q. Would you refer to what is marked Exhibit Number One and describe for the examiner what is shown on that map?

A. Exhibit Number One is a land plat indicating the landowners in the immediate area of the proposed location. As you'll note, the color -- the area colored yellow, 160 acres in Section 17, is the acreage owned by TXO Production Corp.

The 80 acres offsetting our acreage to the east is owned by Maurice L. Brown.

The 80 acres to the west is currently open, State land.

Other offset landowners are indicated on the

plat.

The proposed location is marked on there, being 660 from the north line, 2615 from the west line.

Q. So that acreage colored yellow there is the only acreage which TXO has in this section?

A. Yes, sir, that is all that we hold.

Q. Mr. Tarbox, refer to your Exhibit Number Two and describe what's shown on that map.

A. Exhibit Number Two is a production map indicating the production history and current rates of the wells in the area. Well names and operators are listed on beside each well. The number above the line is cumulative production as of January 1st, 1983. The status is indicated below the line as an average daily rate for December, 1982.

Q. It would appear from looking at your map that the great majority of the wells in this vicinity are depleted and plugged and abandoned. Is that correct?

A. Yes, sir, there are only approximately three wells in the area that are still producing. All of the others have been P&A'd.

Q. Do you have any of these wells which you would like to specifically describe in a little more detail for the Examiner?

A. Yes, sir. We have four wells in particular,

the immediate offsets, the first one being the Morrison No. 1 State 17, located approximately 2300 feet south of the proposed location.

This well penetrated and produced out of the Bough C formation, producing 215,718 barrels of oil. It's currently producing 24 barrels per day, one of the few active wells in the field.

Approximately 2100 feet southwest of the proposed location is the Atlantic Richfield No. 1 Hanagan State. This well produced 116,422 barrels of oil and has been plugged and abandoned.

Approximately 2100 feet northwest of the proposed location we have the Union Texas No. 1-8 State. It also produced out of the Bough C formation, 101,908 barrels of oil.

And the eastern offset to our proposed location is the Morrison No. 1-A Atlantic State, producing 113,184 barrels of oil. It has also been P&A'd.

Q. Mr. Tarbox, turn to your Exhibit Number 3 and describe for the Examiner what is reflected on that exhibit.

A. Exhibit Number Three is a structure map using datums on the top of the Bough C formation, which is the producing interval in the area.

You'll note beside each well a subsea datum

for each well, which is the top of the Bough C.

Q. What conclusion do you draw from looking at your map as far as the proposed location?

A. Well, sir, the proposed location is in an up dip location, which is in an area -- the Bough C has a strong water mechanism in it, and we would like to remain as far up dip as possible in order to prevent the -- to minimize the water cut in our well.

Q. These wells in this pool traditionally make a large volume of water?

A. Yes, sir, they make extremely large amounts of water, the average being three barrels for each barrel of oil.

Q. Mr. Tarbox, look at your Exhibit Number Four and state what is shown on that exhibit.

A. Exhibit Number Four is a Phi-H map, Phi being porous interval, H being thickness. What I have mapped in here is a foot by foot indication of the reservoir quality.

The numbers beside each well, for example, directly east of our proposed location in the Morrison No. 1-A Atlantic State, encountered 44 porosity feet of Bough C. This is an indication of the porous profile, an indication of quality of the Bough C.

If you will refer back to Exhibit Number Two

and in comparison you'll see that the Atlantic State No. 1-A had 44 porosity feet of Bough C and it produced 113,000 barrels of oil.

To the south of our location the Morrison No. 1 State 17 had a 100 porosity units. It produced over 215,000 barrels of oil.

Southwest of our location is the Atlantic Richfield Hanagan State No. 1, had 70 porosity units of Bough C and it produced 116,000 barrels of oil.

To the northwest we have the Union Texas No. 1-8 State, 114 porosity units of Bough C, producing 101,000 barrels of oil.

As you can see from that discussion, the Phi-H porosity units is correlative to production, not directly, but relatively. The greater Phi-H number you have, the higher the production you have.

You can see that the indicated proposed location is expected to encounter approximately 120 -- or 130 porosity feet of Bough C.

Q. Mr. Tarbox, in your opinion is the proposed TXO location the optimum location geologically in an attempt to encounter productive Bough C?

A. Yes, sir, I believe it is, based on production, structure, and Phi-H.

Q. Were Exhibits One through Four prepared by you?

A. Yes, sir, they were.

MR. DICKERSON: Mr. Examiner, at this time I move admission of the Exhibits One, Two, Three, and Four.

MR. STOGNER: Exhibits One through Four will be admitted into evidence.

MR. DICKERSON: And I have no further questions of this witness.

MR. STOGNER: Are there any further questions of this witness?

MR. KELLAHIN: If the Examiner please.

MR. STOGNER: Mr. Kellahin.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Tarbox, you explained to us your experience in this area. Would you tell me again what your first experience was in completing a well in Vada-Penn Pool?

A. Yes, sir, I have just drilled and we're undergoing completion of the TXO No. 1 Price Federal, located in Section 5, Township 9 South, Range 34 East.

Q. This was the well that's some six miles to

the north of -- approximately six miles to the north of the current proposal?

A. Yes, sir.

Q. And that was your first occasion to drill a Vada-Penn Pool well?

A. That is the first well I've drilled.

Q. All right, sir. Prior to that time, Mr. Tarbox, did you work in any way as a geologist for any other pool in the Vada-Penn?

A. Pardon me, I --

Q. Yeah, prior to actually working on this well, that was completed last week, did you directly or indirectly do any geology for anyone else on any other Vada-Penn Pool well?

A. Not for anyone other than TXO Production, although I have worked on the Vada Pool since before November; several months now.

Q. All right, sir. Let me ask you something about the relationship of your proposed unorthodox location to what the pool rules require for a standard location.

I think you told us that the pool rules require a well to be located within 150 feet of the center of a quarter quarter section.

A. Yes, sir.

Q. All right, sir. If you'll look at your -- any of your maps here, and locating the unorthodox location, in terms of the distance from the quarter section line that separates the northeast quarter from the northwest quarter --

A. Uh-huh.

Q. -- let's work from that line.

A. Yes, sir.

Q. Moving to the west, how far west would you go before you encountered your unorthodox location?

A. 25 feet.

Q. All right, sir, 25 feet off the line. Where is the closest standard location as you move to the west from that same line?

A. From that line?

Q. Yes, sir.

A. It is 530 feet.

Q. All right, sir. Standard location would be 530 feet and you're moving to --

A. Pardon me, sir, it's 510 feet, yes, sir.

Q. It's 660 minus 150 --

A. Right.

Q. -- to 510. All right. So that's the difference between a standard location and the proposed unorthodox location.

All right, let's look then, first of all, at your structure map, which is your Exhibit Number Three, and I think -- correct me if I'm wrong, Mr. Tarbox -- I believe you concluded from this exhibit that based upon the strong water drive in the reservoir, that you wanted to be up dip.

A. Yes, sir, but as I mentioned in my original testimony, this is -- production is primarily controlled stratigraphically, which would indicate that the quality of the reservoir,in this particular case the drainage pattern, which we'll refer to at a later time, is more important than the structure.

Q. All right, but if we look at the structure alone for a moment --

A. Uh-huh.

Q. -- subject to your qualifications, it would appear that you would improve your structural position by a well at a standard location as opposed to the unorthodox location.

A. A standard location would be up dip.

Q. All right, let's go to Exhibit Number Four, then. Having looked at the structure, then you prepared this Phi-H map, which I understood you to say was a relative correlation between the porosity units and the productivity of the wells, and you made a comparison between the Morrison

1-A Well in the northeast of the northeast to the Maurice L. Brown Well 117 there in the southwest quarter. I note that you have drawn a contour line showing 25 porosity units. I assume thatis generally the optimum area within the section for which to test the Vada-Penn.

A. Yes, sir.

Q. All right. Now, could you show me any difference on this exhibit in the terms across the units between a standard location and an unorthodox location?

A. No, sir.

Q. All right, sir. So there doesn't seem to be any advantage in looking at the Phi-H map between a standard location or an unorthodox location?

A. Based only on that map, that's true.

Q. All right. Let's turn now to the proposition that we ought to have an 80-acre non-standard proration unit. Let me ask you some questions about Section 17, Mr. Tarbox.

Within Section 17 I think you've located for us some four wells that either now or in the past have produced from the Vada-Penn.

A. Yes, sir.

Q. In terms of each of those four wells, Mr. Tarbox, have all of them been dedicated to a standard 160-acre proration unit?

A. To the best of my knowledge. Yes, sir.

Q. All right, sir. The ARCO Hanagan State Well in the northwest quarter, while it produced,the northwest quarter 160-acre proration unit was dedicated to that well?

A. I believe so.

Q. And the same is true of the northeast quarter with the Morrison Atlantic State Well?

A. Yes, sir.

Q. And currently that's true with the Brown Well in the southwest quarter?

A. Yes, sir.

Q. All right, sir. Now, you made reference to a two or three--I think there were three instances of 80-acre non-standard proration units that you had found in the Vada-Penn Pool. Would you identify for us where those are in relation to this well?

A. Yes, sir. The first case that I mentioned, Administrative Order NSP-1291, allowed for the drilling of the Jubilee Energy No. 1 State 17, located in Section 17, Township 9 South, Range 34 East, approximately four to five miles north of the proposed location.

Q. All right, sir. And how about the next one?

A. I'm not familiar with the well names of the following two cases.

Q. Just give me the general location, where you can find them. You don't know?

A. I don't know.

Q. All right.

MR. DICKERSON: That was, I think, Section 14 instead of Section 17.

A. Section 14.

Q. The first well was Section 14 in the township adjoining this township?

A. Yes, sir.

Q. All right. And you're not certain of where the other two are located?

A. That's correct.

Q. Okay. Now under the Vada-Penn rules as I understand them, Mr. Tarbox, your non-standard proration unit is subject to a reduced allowable, is it not?

A. Yes, sir.

Q. All right. When we talked about a standard allowable for a 160-acre proration unit, in terms of barrels of oil per day, what would be allowed for a well at this depth?

A. I believe it's 362 barrels a day. 382 barrels a day, sir.

Q. All right, sir. A 160-acre proration unit

is allowed 382 barrels a day?

A. Yes, sir, as provided by Order No. R-4429, in Case 4829.

Q. All right, sir. And under the rules, if we have 80 acres, then we simply divide that in half?

A. Yes, sir.

Q. All right. Have you examined the production from the wells in this general area to determine what is the --what is or has been the general ability of the wells to produce a certain quantity of oil on a daily basis?

A. Yes, sir.

Q. And what, in your opinion, is that general average?

A. Well, as this is a unique case, infilling amongst several P & A'd wells, which is something that has not really been done before, we do not know. We can only guess what the average daily rate would be.

Q. What is your best estimate, Mr. Tarbox?

MR. DICKERSON: Objection, Mr. Examiner. There is--this was neither testified to on direct examination nor has there ever been any foundation laid that Mr. Tarbox is qualified to even give an estimate on such matters.

MR. KELLAHIN; If the Examiner

please, I don't think it has to be directly in point with the question asked under direct. It is certainly relevant to, material to the question of what the productive capacities of the wells are. Mr. Tarbox has already admitted that he has a figure in mind, and I'd like to know what that figure is.

MR. DICKERSON: Mr. Examiner, Mr. Kellahin has his own witnesses and if he's got some figures he's free to have them testify as to what their opinions are. On the other hand, our next witness will be a reservoir engineer who may be more qualified to testify on such matters, assuming he has knowledge of it, than this geologist.

MR. STOGNER: Mr. Kellahin, would you have any objections to asking the reservoir engineer at that time, when he is on the witness stand?

MR. KELLAHIN: I intend to ask the reservoir engineer, and I'd like the geologist to tell me what number he's got in his head.

MR. PEARCE: Could you restate your question please, Mr. Kellahin?

MR. KELLAHIN: Yes, sir. I asked him if he knew what the general average production was from the wells in the area on a daily basis, and whether or not he had an opinion or an estimate as to what he might expect

the proposed well to generate on a daily basis. He said, with some qualification, he did have that number in mind, and I'd like to know what it is.

MR. PEARCE: It seems to me that if the witness is being asked for his expectation that he can form an expectation without being a formally qualified reservoir engineer. I think it's appropriate for the witness to answer that question, if he has an answer to that question, Mr. Examiner.

MR. STOGNER: Thank you, Mr. Pearce.

A. What I in fact said was that I could only estimate, since there have been no other wells drilled on an infilled basis like this. The estimate I would give, since I'm not an engineer, would be a broad range. All I could really say that I would not expect it to exceed the 191 barrel a day half allowable.

MR. PEARCE: I'm interested--I understood Mr. Kellahin's question to have another piece of it, and perhaps it didn't. Do you know what the average daily production rate of the other wells in the section were?

A. Naturally, when they were new it was higher, and declined.

MR. PEARCE: But you don't--

A. Over time it would change.

Q. Let me ask another question. Do you know what the general average is for a new well when it first comes on production in this area of the Vada-Penn, in terms of barrels of oil a day?

A. I believe most of the wells potential for several hundred barrels a day.

Q. Of the wells involved in Section 17 or immediately in this area, Mr. Tarbox, what is the current daily oil production of any of those wells?

A. As I indicated earlier, the Maurice Brown No. 1 State 17 is currently making 24 barrels a day. The only other active wells in the area are the Champlin State No. 3-18, located in the southwest of the southeast Section 18, which is currently making 9 barrels a day. And also in Section 18, southeast of the northwest, is the C. B. Reed No. 1 Continental State, currently making 11 barrels a day. In the southeast of the northeast quarter, Section 7, Kaiser Francis Murphy State No. 3-B, Currently making only 2 barrels a day. Also, in Section 8, in the northeast of the northeast is Maurice Brown No. 1-8 State, currently making 2 barrels a day.

Q. Mr. Tarbox, your original application asked for a 160-acre proration unit, split between the two quarter-sections. Why have you amended that application, Mr. Tarbox?

MR. DICKERSON: I am going to object again that this witness is a geologist, you know. He's not a lawyer, Mr. Examiner, nor is he the one who gives instructions from TXO as to what's to be done, and so there is absolutely no reason that he should have any answer to that question.

MR. KELLAHIN: If the Examiner please, the witness is the one that testified that originally the proration unit was as defined on the exhibit and that they had changed it. I'm asking why. If it's a legal reason, he can say it's a legal reason. If it's a geological reason, then I think I'm entitled to an answer from him.

MR. DICKERSON: Why don't you ask him, Mr. Kellahin, if it is to his knowledge based on a geologic reason?

MR. KELLAHIN: I like my question the way it was asked, Mr. Examiner. I want to know if there is a reason he can tell me.

MR. STOGNER: Mr. Kellahin, would you please restate the question?

MR. KELLAHIN: Yes, sir. I asked Mr. Tarbox if the original application split the quarter section in half, dedicating 160 acres to it. I asked him why it had been amended now to a nonstandard 80-acre proration unit.

MR. STOGNER: Mr. Tarbox, would you please respond to that question?

A. We had originally filed a 160-acre proration unit, in keeping with the field rules, with our location located roughly in the center of our unit. It was a decision handed down by management that we should change our proposal to an 80-acre unit. The reasons why are not completely clear to me.

Q. To the best of your knowledge they were not made for geologic reasons, Mr. Tarbox?

A. No, sir.

Q. To the best of your knowledge, Mr. Tarbox, is a second well planned in Section 17 by TXO at this time?

A. No, sir.

Q. Are you aware of any geologic reason why the northwest quarter cannot be dedicated to this well and thereby compose a standard 160-acre proration unit?

A. Geologic reason? No, sir, but--

MR. DICKERSON: Just a minute. Did you say the northeast quarter?

MR. KELLAHIN: I'm sorry. I meant the northwest. I think I said the northeast. I meant the northwest.

A. I'm sorry; I heard it as northwest.

Q. All right, sir.

A. TXO only owns the east half of the northwest.

Q. Is that a geologic reason, or some other reason?

A. That's another reason.

Q. All right, sir. You don't have any geologic reason?

A. No, sir, I don't.

Q. For not dedicating the northwest quarter. All right. Mr. Tarbox, have you considered whether or not the unorthodox location ought to be penalized by the Division because it is unorthodox?

MR. DICKERSON: Objection. That is clearly a legal consideration, Mr. Examiner, and the question calls for a legal conclusion. The witness doesn't have anything to do with penalizing.

MR. KELLAHIN: I have no further questions. I concur with Mr. Dickerson on that question. We'll give him that one. I have no other questions for this witness.

MR. STOGNER: Thank you, Mr. Kellahin.

REDIRECT EXAMINATION

BY MR. DICKERSON:

Q. Mr. Tarbox, just two questions.

Number one, though you're merely a humble geologist, I assume that you know that you cannot dedicate acreage to a well which you do not own.

A. Yes, sir, that's true.

Q. Assuming you did own the west half of the northwest quarter of Section 17, is there any geologic reason that you would not think that was the greatest acreage to dedicate to a new well?

A. The west half of the northwest quarter of Section 17 has already been significantly drained by the Atlantic Richfield Hanagan State No. 1.

MR. DICKERSON: No further questions.

CROSS EXAMINATION

BY MR. STOGNER:

Q. Mr. Tarbox, I have a couple of questions, especially on the -- concerning the AR Morrison No. 1. When was that P&A'd?

A. Pardon me, which well?

Q. The one in the west half of the northwest quarter, the R. R. Morrison No. 1.

MR. DICKERSON: That's the ARCO Hanagan State, Mr. Examiner.

MR. STOGNER: I'm sorry, I'm sorry. I was looking at the name below, the Hanagan State No. 1.

A. The Hanagan State No, 1, sir, was P&A'd in 1975.

Q. And how about the R. R. Morrison No. 1 in Unit A?

A. In the northeast of the northeast?

Q. Yes, sir.

A. That well was -- is currently inactive. I do not have an P&A date on that, sir.

Q. Thank you.

MR. STOGNER: I have no further questions of this witness.

Are there any other questions of Mr. Tarbox? He may be excused.

C. L. VICKERS,

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

DIRECT EXAMINATION

BY MR. DICKERSON:

Q. Mr. Vickers, would you please state your name, your occupation, and where you live?

A. My name is Clark Vickers. I am employed by TXO Production Corporation in Midland, Texas.

Q. Mr. Vickers, would you briefly summarize your educational background for the Examiner?

A. Yes, sir, I attended Texas Tech University between 1974 and 1979, and received a Bachelor of Science degree in chemical engineering.

Q. And what has been your work experience since your graduation?

A. Upon graduation I was employed by Amoco Production Corporation in Andrews, Texas, for a period of approximately two years as a production engineer.

In April of 1981 I went to work for TXO Production Corporation and have currently been with them for approximately two years as a reservoir engineer.

Q. And do your duties with TXO Production Corporation involve you in the area of the Vada-Penn Pool?

A. Yes, they do.

Q. And are you familiar, Mr. Vickers, with the existing wells and the application that TXO has filed in this

proceeding?

A. Yes, sir, I am.

Q. And have you made certain studies of some of the production histories of these other producing Vada-Penn Pool wells upon which you intend to testify?

A. Yes, sir, I have.

MR. DICKERSON: Mr. Examiner, I tender this witness as an expert engineer.

MR. STOGNER: Mr. Vickers is qualified.

Q. Mr. Vickers, would you refer to what you have marked as TXO Exhibit Number Five and describe what is shown by that exhibit?

A. This exhibit is just an estimate of the original oil in place underneath the lease, the TXO Production Corp. lease, highlighted in Mr. Tarbox' previous exhibit.

The equation shown is a very simple volumetric equation. The porosity and water saturation listed here are fieldwide averages, these numbers taken, I believe, from the Roswell Geological Society literature. The area, of course, the 160 acres under lease, the average thickness, a number arrived at by Mr. Tarbox, across our lease, and the original formation volume factor, which is an estimate, of 1.1 reservoir barrels per stocktank barrel. Incorporating

these figures into the equation above we arrived at an original Oil in place estimate of 1,149,200 barrels of oil.

Q. That's the figure assuming all oil originally in place could, in fact, be produced at the surface.

A. Correct. That's -- that's qualified to the original oil in place.

Q. Mr. Vickers, what use do you make of such information as this?

A. It is basically a starting point to determine potential recoverable reserves.

Q. And does your Exhibit Number Six bear on that question?

A. Yes, sir, it can.

Q. Would you refer to Exhibit Number Six and describe for the examiner what you have done on that exhibit?

A. Basically what I have done here is to indicate the approximate drainage of seven of the offset wells immediately surrounding the TXO lease. The equation used is the same equation listed on the previous exhibit, and in this case, in this exhibit I assumed that 20 percent of the oil in place underneath the circles as drawn was recovered by each of the wells. This is pretty much a twist-off of a fieldwide study that was conducted in this area. The 20 percent factor seems to be fairly consistent throughout the

field and what these circles show is a very idealized drainage pattern, and the intent of this exhibit is to show the major areas of depletion in the area, and in conclusion, the proposed location is what I feel to be the optimum location that would encounter the least amount of drainage.

Q. Is there anything on this exhibit, Mr. Vickers, which would bear on Mr. Kellahin's obvious question of why not move your proposed location to an orthodox location?

A. I believe the question was to move the location farther to the west, and in my opinion, doing so, we would tend to encounter more and more depletion as we move west.

The optimum direction for us to move in this particular case, in my opinion, would be to move north.

Q. Where, in your opinion, Mr. Vickers, would the -- would the best location to drill be on TXO's acreage to encounter, or have the best chance of encountering undepleted Bough C formation?

A. I feel the best location on our lease is the proposed location.

Q. And is it your opinion that if the well were to be located at some other point that oil would be left in the ground which may be recovered through TXO's proposed well?

A. Yes, sir, I believe that, and the reason I would say that is that should we move into an area of more depletion, it would tend to enhance the chances of us reaching an economic limit much quicker, making it -- making it unable for TXO to continue to produce the wells economically.

Q. In your opinion, Mr. Vickers, would the granting of this application result in the overall production of more oil than would otherwise be recovered?

A. Yes, sir, it's my opinion that it would.

Q. Let's assume, Mr. Vickers, that the Division grants this application and TXO is allowed to drill its well at the proposed location and dedicate the east half of the northwest quarter to the well, what would your opinion be as regards the possibility of a second location in the west half of the northeast quarter?

A. It would depend a great deal on what kind of data we receive from this well drilled at this location. My opinion at this point in time is that a well in the east half of the -- excuse me, in the west half of the northeast quarter would not be an economical well. It would not pay out or meet TXO's economic criteria.

Q. So based on that current level of your knowledge, there would be no current plans by TXO to drill in the northeast quarter?

A. That is correct, there are no current plans at this time.

Q. You heard Mr. Tarbox testify, Mr. Vickers, to the depleted wells in the area which are also shown on your Exhibit Number Six, would you concur with his statement that the acreage, for instance, dedicated to that ARCO Hanagan State Well in the west half of the northwest quarter of Section 17 would not be attractive as far as drilling a new well either on that acreage or dedicating that acreage to a new well to be drilled?

A. That is correct. I do not feel there are sufficient reserves remaining on that 80-acre tract that would allow a well to be drilled.

Q. Mr. Vickers, were Exhibits Five and Six prepared by you?

A. Yes, sir, they were.

MR. DICKERSON: Mr. Examiner, move admission of TXO Exhibits Five and Six at this time.

MR. STOGNER: Exhibits Five and Six will be admitted into evidence.

Q. Mr. Vickers, in the -- in your opinion would the granting of TXO's application be in the interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir, I believe it would.

MR. DICKERSON: I have no further questions, Mr. Examiner.

MR. STOGNER: Mr. Kellahin, your witness.

MR. KELLAHIN: Thank you, Mr. Examiner.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Vickers, are you aware that the Vada-Penn Pool requires, unless an exception is granted, 160-acre proration unit be dedicated to Vada-Penn Pool well?

A. Yes, sir.

Q. Based upon your engineering studies, Mr. Vickers, do you concour with the finding in that order that one well in the Vada-Penn Pool can be expected to drain 160-acre proration unit?

MR. DICKERSON: Objection, Mr. Examiner, there's been no foundation laid that he has reviewed the evidence upon which that order was based.

MR. KELLAHIN: I asked him if he knew that the Vada-Penn Pool was based under the proposition that one well would drain 160-acre proration unit. He said

he was, and I'm going to ask him -- I'm going to ask him if based upon his study of the -- engineering study of the area, whether he believes that one well is going to drain 160-acre proration unit.

MR. STOGNER: Please respond to the question, Mr. Vickers.

A. Yes, sir. If I was understanding your first question correctly, Mr. Kellahin, my response was intended to be that the pool rules are indeed 160 acres; for what reason they were established, I do not know.

And in response to your second question, I feel there are some wells in the Vada-Penn Pool that are capable of draining 160 acres. I believe that is shown on this map, indeed, by the Signal State 1-AP, located in the northeast corner of the southeast quarter. I believe that well has drained somewhere around 160 acres.

Again, there are several wells in the field, such as the R. R. Morrison L-B, located up in Section 8 north of our location, that has only drained approximately 60 acres by my estimate.

So I believe that the drainage is extremely varied throughout the field.

Q. If I understood your direct testimony correctly, Mr. Vickers, you have proposed or concur in the pro-

posal as to this well location because in your opinion it is the optimum location from which to drain the TXO lease, the 160-acre unit outlined in yellow.

A. Yes, sir.

Q. All right. So what you're doing is taking one well, simply dedicating 80 acres to it, with the knowledge, however, that you won't have to drill a second well in order to drain your entire 160-acre lease.

A. I believe in my direct testimony I may or may not have stated this, but I believe that the -- a substantial part of our lease, primarily in the southern half, is reasonably depleted already.

Q. All right, let's take your lease and split it in half with a west half 80 and an east half 80 --

A. Very well.

Q. -- and we draw a line vertically north to south. Based upon your studies of the reserves underlying your section, I mean your quarter section, what portion of the potential reserves do you attribute to the west half of the northeast quarter?

A. I have not made a study in that kind of detail. Again, I stated that a lot of the numbers used are assumed numbers and it would be very difficult to arrive at an exact number.

Q. Can you give us your best estimate of what percentage of those reserves are going to be recovered in the west 80 acres as opposed to the east 80 acres?

A. I believe the -- it could be about 50/50, about half and half.

Q. Based upon your Exhibit Number Six, and the drainage patterns that you have drawn on Section 17, in order to drill a well that will fairly and reasonably drain the 80-acre proration unit that you're going to dedicate to this well, can you do that with a well at the proposed location or can you do that more adequately with a well drilled at the closest standard location, which would be 510 from that dividing line we've been talking of?

A. Is your question strictly for the 80-acre, the west half 80-acre section?

Q. Yes, sir.

A. If that's all our concern was for, yes, sir, a proposed location farther to the west would be ideal.

Q. Are you familiar with how the proration units have been and are now aligned in Section 17 with regards to those other wells that are spotted?

A. No, sir, I am not.

Q. For instance, you don't know what the acreage dedication was to the R. R. Morrison Atlantic State Well in

the northeast 160?

A. No, sir, I do not.

MR. KELLAHIN: I have no further questions of Mr. Vickers, Mr. Examiner.

MR. DICKERSON: Just a couple, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. DICKERSON:

Q. Mr. Vickers, I suppose you would admit in response to Mr. Kellahin's question, had he asked it, that this 160-acre lease of TXO could in fact be drained by two wells, could it not?

A. Yes, sir, it could.

Q. It could be drained by 10 wells, couldn't it?

A. Yes, sir.

Q. In your opinion, if you drilled two wells on this acreage or 10 wells, would that result in the drilling of unnecessary wells?

A. Yes, sir, I believe it would.

Q. Is that a definition, as far as your understanding goes, of the term "economic waste"?

A. Yes, sir, as I understand the term, yes,

sir, I believe it is.

MR. DICKERSON: No further questions.

MR. STOGNER: Are there any further questions of Mr. Vickers? If not, he may be excused.

MR. DICKERSON: Mr. Examiner, that concludes our case.

MR. STOGNER: Thank you, Mr. Dickerson. Mr. Kellahin?

HURALD I. MILLER,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A. Yes. My name is Hurald I. Miller, and I am a geologist for the Maurice L. Brown Company.

Q. Mr. Miller, when and where did you obtain your degree in geology?

A. I obtained my degree in geology from the University of New Mexico. It was granted in 1950 by the University.

Q. Subsequent to graduation, would you summarize where you have worked as a geologist?

A. Yes. Worked for Shell Oil Company for 25 years, retired. I did a short piece of work for the New Mexico Bureau of Mines in Socorro. I worked a short time for the Bureau of Land Management in Kingman, Arizona, and I also worked about 15 months for the Arizona State Land Department in Phoenix, Arizona.

Q. How long have you been employed as a geologist by Maurice L. Brown Company?

A. I was hired effective July the 1st, 1981.

Q. Mr. Miller, are you familiar with the geology in the Vada-Penn Pool in Lea County, New Mexico?

A. I have a limited knowledge of it, yes.

Q. Have you studied the geologic data and information with regards to Section 17 and the adjoining sections identified by the applicant on his exhibits?

A. Yes. Yes, I have.

Q. Have you made a study of the wells within Section 17 and reduced them to a cross section?

A. I have, yes.

Q. And is that what is before you as Brown Exhibit One?

A. Yes, sir, that is the document.

Q. All right.

MR. KELLAHIN: If the Examiner please, we tender Mr. Miller as an expert geologist.

MR. STOGNER: Mr. Miller is so qualified.

Q. Mr. Miller, let me see if we can't move this on just a little bit.

A. Okay.

Q. In terms of your cross section, I also would like you to look at, and I'll ask you some questions about the applicant's Exhibit Number Four, which he's referred to as his Phi-H map, and his Exhibit Number Three, which is his structure map.

Mr. Miller, I'm particularly interested in one opinion from you and that is whether or not, in your opinion, there is any geologic difference for a well drilled 25 feet from the quarter section line dividing the northwest quarter and the northeast quarter as the applicant proposes, as opposed to the closest standard location, which would be 510 feet from that dividing line?

A. I think it's very possible there's absolutely no difference.

Q. Let's go to your cross section and have you run through, then, the wells that you have located on your

cross section and identify them for us.

A. Yes. This cross section is called A-A'. It begins in the southwest quarter of Section 8 with the Union Texas Petroleum Corporation State 8 No. 1. It goes southeast to the northwest quarter of Section 17 to the Atlantic Richfield Hanagan State No. 1. It goes southwest in the south -- in the northwest quarter of Section 17 to the R. R. Morrison Atlantic State No. 1. It terminates in the southwest of Section with the Maurice L. Brown Company State 17 No. 1 Well.

Q. Based upon your studies, Mr. Miller, and the cross section which you've just identified, what is your opinion with regards to the characteristics or continuity of the Vada-Penn Pool in Section 17?

A. Well, I think they change very little over the -- the entire Section 17, very locally, they could be different.

Q. Let me have you identify for us within Section 17 what acreage Maurice L. Brown Company has under lease.

A. All right, they hold, with the 17 No. 1, the southwest quarter of Section 17.

They hold by production the east half of the northeast of Section 17.

They hold by production the south half of

the southeast of Section 17.

Q. Let me -- let me clarify something. ON the southwest quarter of 17, that Brown acreage is held by the well depicted upon that 160-acre proration unit.

A. Yes.

Q. All right, sir, now when we look at the east 80 acres in the northeast quarter, there's obviously a plugged and abandoned well.

A. Yes.

Q. That lease acreage is still held by Brown.

A. This is correct.

Q. All right, and the same is true of the south 80 acres in the southeast quarter.

A. Yes, I believe that is correct, sir.

Q. All right, let me have you identify for us what objection you have to the applicant's proposed unorthodox location, 25 feet from that quarter section line.

A. My -- I think I probably have two, I have two reasons that I would object to it. One would be that by moving it, possibly west, to conform with a normal spacing, there is just no reason geologically that it couldn't be as good, it might actually be enhanced by that. That possibility is there.

The second is, I believe that by leaving it

at the 2615 from the west, 660 from the north of Section 17, I believe it possibly could very easily harm the Maurice L. Brown Company's right in normal spacing that has already been established there by -- by the Atlantic Richfield Hanagan State No. 1.

Q. With regards to the proposal of an 80-acre nonstandard proration unit, Mr. Miller, consisting of the east half of the northwest quarter, what, if any, objection does the Maurice L. Brown Company have to the establishment of an 80-acre nonstandard proration unit in Section 17?

A. I'm sorry, I don't quite follow you.

Q. All right, sir. I asked you in -- we talked about the unorthodox location.

A. Yes.

Q. Now I want to talk about the proposed nonstandard proration unit, all right?

A. Uh-huh.

Q. Standard spacing is 160; they've asked for 80 acres.

A. Uh-huh.

Q. What, if any, objection does Maurice L. Brown Company have, to your knowledge, with regards to the dedication of only 80 acres as opposed to 160?

A. Well, I think the main objection is that --

that it probably does not enhance the potential of the location that would conform to normal -- to normal spacing.

Another objection would be there it establishes a precedent for something that does not exist at the present time.

Q. Based upon your studies, Mr. Miller, are you aware of any geologic reason why one well in Section 17 would not be capable of developing and draining a 160-acre proration unit?

A. I understand, I'm not a real expert on porosity, per se, in the Vada-Penn, but I think that the -- the unit is so -- so uniform it could seem to me have very little, very little reason that it would not drain 160-acre spacing.

Q. Was applicant -- I'm sorry, was Maurice L. Brown Exhibit Number One compiled by you or compiled under your direction and supervision?

A. It was compiled by me under my supervision with the help of a draftsman.

Q. All right, sir.

MR. KELLAHIN: That concludes my examination of Mr. Miller.

MR. STOGNER: Thank you, Mr. Kellahin. Mr. Dickerson, your witness.

CROSS EXAMINATION

BY MR. DICKERSON:

Q. Mr. Miller, I just wonder in your review and your becoming familiar with this Vada-Penn Pool, have you had occasion to become familiar with other Pennsylvanian special pools in this same general area of northern Lea County and Roosevelt County?

A. No. No, not recently, no.

Q. Are you aware that there are other Pennsylvanian pools there?

A. The total Pennsylvanian section?

Q. No, this same --

A. Bough C, yes. Yes.

Q. Do you know what the spacing --

A. No, I --

Q. -- rules are in effect on those?

A. No, I'm sorry, I do not.

MR. DICKERSON: No further questions, Mr. Examiner.

MR. KELLAHIN: I have nothing else for Mr. Miller. Thank you.

MR. STOGNER: Are there any further questions of Mr. Miller? If not, he may be excused.

WILLIAM M. GROESBECK,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A. I'm W. M. Groesbeck, G-R-O-E-S-B-E-C-K.

Q. Would you tell the Examiner what, if any, professional degrees that you hold?

A. Bachelor of Science in petroleum engineering.

Q. And when and where did you get that?

A. University of Texas in Austin.

Q. And in what year, sir?

A. I graduated in 1952.

Q. All right. Subsequent to graduation have you worked as an engineer in the Vada-Penn Pool, particularly in Lea County, New Mexico.

A. Yes, yes, and all over the State of Texas and Wyoming.

Q. All right, sir. Let's take a moment and

have you describe for the examiner what has been your general experience with the Vada-Penn Pool?

A. I was manager of the drilling department for BTA in the very active drilling and development stage of the Vada-Penn Field in 1968.

I was also drilling engineer for Tenneco Oil Company for several years during later development in the field.

I've been a production engineer. All the time I haven't been in drilling I have been in charge of production for various companies in the Vada-Penn Field since 1968.

Q. What is your employment with Maurice L. Brown Company?

A. I'm associated with the Maurice Brown Company. I'm not an employee. I operate their properties and I'm called a District Engineer. I own an override in all of their production. I own working interest in most of it.

Our well being affected here, I own both working interest and override.

Q. In terms of the numbers of Vada-Penn Pools that you have worked on or participated in, can you give us some estimate of the number of wells that you've had some involvement in?

A. Probably 75 wells I've been associated with the drilling or -- and/or re-entry of.

Q. Currently within the immediate area depicted by the applicant on their exhibits, what, if any, personal interest do you have in any of these Vada-Penn wells?

A. Well, I own interest in the two Maurice Brown Company wells that are shown on the plat here, the State 8 in Section 8, State 17 in Section 17, offsetting their property there.

Q. As a petroleum engineer are you aware of the general production characteristics and the other engineering matters with regards to production and drilling a Vada-Penn well?

A. Yes.

MR. KELLAHIN: We submit our engineer as an expert professional petroleum engineer.

MR. STOGNER: He is considered qualified.

Q. Let me show you what Mr. Vickers has used as an exhibit. Mr. Groesbeck, I show you Applicant's Exhibit Number Six, which shows a drainage map, and if you need to look at it, Exhibit Number Five is oil in place calculation.

Let me direct your attention first of all to the 160-acre proration unit consisting of the northeast

quarter of 17. There is or has been a Vada-Penn well in the northeast of the northeast. Do you concur in Mr. Vickers conclusion that that well has significantly drained and depleted the Vada-Penn with regards to that proration unit?

A. No.

Q. On what do you base your opinion?

A. This would still make a good well, the R. R. Morrison Atlantic State, would still make a good well, it has good porosity. It was not plugged because of depletion; it was plugged because of uneconomic operation with gas at 10 to 15 cents an Mcf, with oil at $3.50 a barrel, thereabouts, it would -- it would make an economic well at the present.

Q. Do you have an opinion as to whether or not the northeast quarter still has remaining recoverably hydrocarbon reserves?

A. This is the area I'm talking about, the Morrison Well in the northeast quarter, and it should be adequate to drain that northeast quarter.

Q. Based upon your experience, Mr. Groesbeck, do you have an opinion as to whether or not a Vada-Penn Well in this area can be expected to drain 160-acre proration unit?

A. If it has good porosity and permeability, it has probably the capability of draining the entire section.

Q. What is your objection, if any, to the ap-

plicant's proposed unorthodox location as we've been discussing?

A. I didn't hear the first --

Q. Yes, sir. I want to direct your attention to that portion of the Applicant's application that talks about the location, 25 feet off of that dividing line. What, if any, objection do you have for them doing that?

A. It would drain the northeast quarter, which we should have a right, either to drill a replacement well in the northeast quarter, or re-enter the R. R. Morrison.

Q. Are you familiar with the proration unit that was originally used for the R. R. Morrison Atlantic State Well in the northeast quarter?

A. I see on the map that it was drilled on 160-acre spacing. I don't know that that was a rule. I don't know that the field rule was established at the time the well was drilled.

Q. Do you know whether or not the west half of the northeast quarter participated in the production from that Morrison well?

A. Why, certainly, I would assume that it did.

Q. Let's turn now to the portion of the application that discusses an 80-acre nonstandard proration unit. All right, sir? What, if any,objection do you have to appro-

val of such an 80-acre nonstandard proration unit?

A. It would establish a precedent in the area which would allow possible drilling of four wells in the area, three of which would be unnecessary.

Q. Mr. Tarbox discussed with us earlier this morning a 160-acre allowable of 382 -- 382 barrels of oil a day. Based upon your knowledge of the Vada-Penn Pool production, Mr. Groesbeck, what would you anticipate a Vada-Penn well -- Pool well producing on a daily basis? Can you give me some --

A. Under 50 barrel a day, probably on the order of 25 barrel a day.

Q. Upon what do you base that opinion?

A. Because the entire Bough C trend area, the Vada Field, is pressure depleted and if they should make a good well there that will -- it would even, at the location they picked, would affect production on our well to the south. We can't -- we can't prevent a well being drilled in the northeast -- or northwest quarter, but if one is drilled and is successful, it certainly would affect the drainage even on our well, the State 17 No. 1.

Q. Mr. Groesbeck, have you been able to calculate or determine a recommendation to the Examiner for a penalty factor to be imposed against the applicant?

A. I think any reasonable penalty would not have any effect whatsoever, because they won't make a quarter of allowable, a penalty applied has no effect at all in easing the situation of damage that would be done to us, either on our existing well or our possible re-entry in the northeast quarter.

Q. In conclusion, Mr. Groesbeck, do you have an opinion as to whether or not as a petroleum engineer you would recommend to the Examiner that the application be granted or denied?

A. As I understand they're requesting 80-acre spacing, we would want to oppose that very, very much. There is no -- no justification anywhere. The record's filled -- filled up with reasons where that is not necessary throughout the Vada-Penn Field, 30 miles. We sense any time there is a well shutdown within a half a mile of us, we feel it within just two or three days, or if another well is started up close to us, we feel it very rapidly.

Q. Are you aware of any engineering reason why the Applicant should not be required to drill at the closest standard location as opposed to the proposed unorthodox location?

A. I think they should be required to drill the standard location if they drill at all.

MR. KELLAHIN: That concludes my examination of Mr. Groesbeck.

We move the introduction of Maurice L. Brown Company Exhibit Number One.

A. Could I add one thing?

Q. Well, let's wait and see what the questions are, Mr. Groesbeck. Why don't you stay there? You'll be asked some questions.

A. All right, fine.

CROSS EXAMINATION

BY MR. DICKERSON:

Q. Mr. Groesbeck, I'm just curious when this well in the northeast quarter of Section 17 was plugged, if you know.

A. I don't have that date. I would assume in the early seventies, but I don't have that, but many, many wells were plugged during '71-'72.

Q. Was it your recommendation to plug that well?

A. That was not our well. We have acquired that acreage.

Q. Since that time?

A. Yes, we acquired it when we acquired the State 17 No. 1.

Q. And when did you acquire that?

A. About four years ago.

Q. So you bought a new lease from the State of New Mexico.

A. No, sir, we bought a well that was fixing to be plugged by Tom Brown Drilling Company. We made -- they had a casing problem. We made a proposition to buy their salvage contingent upon our being able to buy the lease from the State of New Mexico.

We bought the lease. We had it put up for bid. We bought it and then we bought the salvage from Tom Brown and we acquired the east half of the northeast and the south half of the southeast quarter.

Q. But when you did acquire the east half of the northeast you did purchase it directly from the State of New Mexico.

A. Yes.

Q. Do you know how much Mr. Brown paid for that lease?

A. No, sir, I don't have that.

Q. My map, Exhibit Number One shows $68.75; that sound about right?

A. Whatever I paid, I paid my proportionate share of it.

Q. Have you recommended to your employer, Mr. Groesbeck, that he either re-enter that well or drill himself a new well there on the northeast quarter?

A. Yes, we've discussed it. We continue discussing it. We have wells like that all over the field.

Q. But have you recommended to him --

A. Certainly, we have.

Q. What have you recommended?

A. To consider re-entering and we have attempted re-entering many wells throughout the field and probably will that one in time.

Q. Just as a general proposition, Mr. Groesbeck, would you think that assuming TXO desires to drill a dry hole or a stinker that they should be perfectly free to do that?

A. Yes, sir, as long as they don't take our production by a nonstandard location.

Q. You would recognize, would you not, Mr. Groesbeck, that TXO could move to a standard location that would be considerably closer to your producing well --

A. Absolutely.

Q. -- in the southeast - -

A. Yes, sir, I understand that they could.

Q. So are you not glad that they're not moving closer to your well in the south half?

A. Our company has moved to allow or not oppose the nonstandard location if Texas Oil and Gas would give up on the 80-acre spacing, which we object to very much.

Q. But you heard the testimony, did you not, that Texas Oil and Gas does not own the adjoining 80-acre tract in the northwest quarter?

A. WE didn't own the southeast quarter or the south half of the southeast or the east half of the northeast, either, when we started dealing for the State 17-1. We bought it, and there is nothing preventing them from having this lease put up. The state would be glad to do that.

Q. Well, there's nothing preventing Maurice L. Brown from doing the same thing, is there not?

A. We don't want it.

Q. You don't want it but TXO should want it? Why would that make any sense?

A. Well, we don't want them to affect and drain our northeast quarter.

Q. Well, that's obvious by your being here, I think, but still you concede, do you not, that Maurice L. Brown does not desire to have the acreage in the west half of the northwest quarter.

A. NO, we did own it; we turned it loose.

Q. How about if it were given to you, would

you take it if it were given to you?

A. Well, never turn down a gift.

We owned the entire section at one time. We allowed that to expire.

Q. Assuming TXO Production Company drills this well at its proposed unorthodox location, and further assuming that this Division allows them to dedicate an 80-acre unit to the well, and further assuming that you're correct that they make a 25 barrel a day well in excess of 10,000 feet deep, wouldn't you think that's penalty enough?

A. I don't -- I'm not -- I'm saying that a penalty that might be assessed would have no bearing -- it would be -- offer no help to us at all, because it would -- it would have no meaning because they will not have thit kind of production, unless they're going to assess it at 1/10th, or something like --

Q. So under the existing rule, assuming an 80-acre unit were allowed to TXO here, that under that rule they would be entitled to 191 barrels of oil per day, you think that highly unlikely, I guess.

A. Yes, very unlikely.

Q. Are you familiar with some of the other Pennsylvanian Pools in this area of northern LEa County --

A. OH, yes.

Q. -- and Roosevelt County?

A. Yes.

Q. Do you know what -- could you name two or three of them?

A. Bough Field, Crossroads, Allison Field to the north. South Lane Field, it used to be called down here. The Seminola Field, BTA well right here, I probably was in on the drilling of that well, in SEction 20, just south, that used to be a field, Seminola Field.

Q. Are you -- are you familiar with the spacing rules in those pools?

A. Well, there's not been a hearing. BTA is the one, I understand, that called a hearing to get the 160-acre spacing set in the Vada-Penn. This is the only one that has had the hearing. Otherwise it goes by the statewide rules of 40 acre.

Q. And isn't it true that there's some 80-acre development in those other pools, sir?

A. 40-acre, too, just to the west of here is 40-acre --

Q. But I take it you --

A. It was not in the Vada-Penn only prior to the time that the field rules were established.

Q. Yeah.

A. There have been individual wells produced more oil than any reservoir engineers could compute for an entire section based upon the porosity and pay thickness.

Q. Mr. Groesbeck, when was it that H. L. Brown, your employer, or --

A. M. L.

Q. Maurice L. Brown drilled his last well in the Vada-Penn Pool?

A. Our last one we drilled was about three miles mainly west from here, a well we called Blue Quail, which we lost from casing collapse, and that was about three years ago.

We re-entered wells periodically but as far as drilling top to bottom, this was the last well we drilled.

Q. As to your objection that TXO's application in this case, if granted, would create a precedent for such things to happen in the future, Mr. Groesbeck, are you aware that there have been a series of exceptions in this pool already?

A. Are you talking about Jubilee? There's probably no wells, no producing wells, close to them for the operator to object. Anyone that has a Bough C well is going to object to someone drilling an unorthodox location, getting close to them, because if he knows anything about Bough C,

he knows that's going to hurt him.

Q. But you would concede, Mr. Groesbeck, that TXO could move to an orthodox location much closer to Brown's acreage.

A. We would give up our fuss on the location but we don't want to give up our fuss on the 80-acre.

Q. Why is that? I gather from that --

A. Because it allows the drilling of four additional wells in the area.

Q. Allows, it may require the drilling of additional wells in the area.

A. And this is a waste, isn't it?

Q. And you would assume that -- or I would assume MR. Brown does not want to do that.

A. No, certainly not.

Q. You don't think there's any oil under this TXO acreage in substantial quantities to be recovered.

A. One well should be adequate to do it.

Q. But there have been two wells already in the north half of Section 17, correct?

A. North half.

Q. Right.

A. Yes, one in the northeast quarter, yes, still would be a good well.

Q. Well, why don't you buy that -- why don't you recommend to your employer that he buy that 80-acre State lease, which is unleased, on the west half of the northwest quarter and get after it?

A. I don't like that location.

Q. It's got a good well on it, though.

A. No, it does not.

MR. DICKERSON: No further questions.

A. I didn't say that was a good well. I said the one in the northeast quarter is a good well.

MR. KELLAHIN: I have nothing further of this witness, thank you.

CROSS EXAMINATION

BY MR. STOGNER:

Q. Mr. Groesbeck, you stated in your testimony that you felt when a well in the Vada-Penn was plugged and abandoned, or started up, you all felt -- you all felt this. Could you please elaborate on that a little further?

A. Oh, yes. I've experienced this for fifteen years, at least, from back in the late sixties, early seventies. I usually know now an offset well, when it quits producing, not even on my lease, another operator, I can tell from the effect it gives in my well pretty quick. And I may

know that other company has a problem in their well before they know, because of this effect upon my well half a mile away, and even more.

Q. How does this affect your well?

A. WEll, if there's -- if we're having to handle a lot of water, then it's a help to me when their well is producing good because they're helping me produce the water.

If it's in an area where there's not much water, I suffer a reduction in oil production, when their well is producing good.

Q. How does this affect you when a well next to you is plugged and abandoned?

A. It prolongs the life of my well and that's why the whole field has a little more gentle decline now. In 1970 - '71 there was about a 50 percent annual decline rate. People were plugging wells left and right. BTA had 120 wells. By 1975 they had 17 wells left, and we bought those, and they were preparing to plug them.

Q. Mr. Groesbeck, the R. R. Morrison No. 1 in the northeast of the northeast quarter of Section 17, how was that plugged and abandoned? Was the casing -- was the production string pulled?

A. Oh, I'm sure it was shot, probably, many times. I have this in my files but I do not recall it, the

details of it right now. 8-5/8ths would be shot and probably in several places, and the long string shot, no doubt, many places, and salvaged.

It may or may not be re-enterable.

Q. Thank you, Mr. Groesbeck. I have no further questions.

MR. STOGNER; Does anybody else have any questions of Mr. Groesbeck? If not, he may be excused.

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

MR. STOGNER: Thank you, Mr. Kellahin.

MR. DICKERSON: MR. Stogner, if s may, I'll be very brief.

MR. KELLAHIN: Wouldn't you like to go last? Do you want me to say something first?

MR. DICKERSON: Go ahead.

MR. KELLAHIN: What we're trying to avoid is quite obvious, Mr. Stogner, is the precedent established with a nonstandard 80-acre proration unit.

The applicant has the burden of proof in the case and we believe he has not sustained the burden to establish either of the things he wants to accomplish.

ADmittedly, the applicant doesn't

control the west half of the northwest quarter. THere is nothing precluding him from having the STate put up that acreage for sale, compulsory pooling, all kinds of options. That's not an impediment.

We think that the reduced allowable as a solution for a nonstandard proration is not appropriate because you can see from our witness' testimony the production characteristics of the well, the wells in the area, demonstrate that they're going to produce less than 30 barrels of oil on a daily basis, so 50 percent of allowable is 191 barrels; it means nothing.

The other problem is that by establishing a precedent of 80-acre proration units, it creates the potential for drilling up the rest of the section on 80 acres when we already know that 160-acre spacing is going to be more than adequate.

The other concern we have is that TXO, by locating the well where they propose, are indirectly trying to accomplish what they realize they can't accomplish directly, and what they're doing is trying to drain their 160-acre lease with one well. Well, that would be all right except that half of their lease is attributable to a proration unit in which we have a 50 percent interest.

I think it's significant that the

Morrison Atlantic State Well in the northeast quarter produced for the life of that well based upon a proration unit of 160 acres. That well has been abandoned, but there is testimony that there are significant reserves left in place which can be recovered and attributable to that 160-acre proration unit.

But we've shared the production in the past and now we are precluded in the future from sharing in the production. I think the geologist from TXO has demonstrated it for us better than anyone that there is no significant differenbe between moving from 25 feet off the line to 510 off the line. All his exhibits demonstrate that. In fact he moves up structure, his PHi-H map shows no difference.

I think what they're doing is they have drawn a drainage circle using the offsetting wells in trying to locate a well in their lease to drain as best they can with one well. We object to doing that because by doing it, it captures, at least Mr. Vickers tells us, perhaps 50 percent of the production which would be attributable to our interest in the northeast quarter, and we object to that.

As a solution, the COmmission sometimes comes up with a penalty factor based upon location. If you take the acreage allowable for 80 acres, 191 acres, and use that as the starting point and come up with a per-

centage between 510 feet and 25 feet, that's about 5 percent, I would suggest that by making the calculation you can come up with a penalty factor of about 10 barrels of oil per day. That might be a reasonable way to get to a solution.

I think it's probably better, based upon the evidence, to deny the unorthodox location and require them a standard location, but if the applicant still thinks this is where he wants to be, one solution is to do the arithmetic calculation showing the encroachment and thereby assigning allowable of about 10 barrels a day.

That concludes our comments on this case. Thank you.

MR. STOGNER: Thank you, Mr. Kellahin. MR. Dickerson?

MR. DICKERSON: Mr. Examiner, I'd like to complement Mr. Kellahin on his superb ability to compare apples and oranges. The only thing I find wrong with it is the omission of the fact that the proposed TXO location is hundreds of feet from Mr. Brown's nearest acreage, and as admitted by Mr. BRown's own witnesses TXO could without any objection from Brown drill at orthodox locations much closer still. It's obvious from what the witnesses testified to that they're not here to object on any engineering basis. They're here to object on the basis that they do not desire to have

to develop in the future their acreage further upon 80-acre spacing. It's very apparent to me, and I hope to the Division, that that's the objection of the parties appearing in protest to TXO's application.

It's certainly true, as the witnesses admitted, that TXO could, or other parties could, drill additional wells on this acreage, but it's also true that it is be definition economic waste when unnecessary wells are drilled to recover oil that would be recovered even without the drilling of those wells.

As to Mr. Brown's persistent objections that this establishes some kind of precedent, if the Examiner will recall, the testimony is that other Vada-Pennsylvanian -- or the other Pennsylvanian pools in this same general area do not operate traditionally under this 160-acre spacing rule and if the Examiner will review the records of the Vada-Penn rule, you'll find that originally this pool, under R-3179, was developed on 80-acre spacing and has gone to 160 on a temporary and then later a permanent basis, but the fact remains that TXO, whether it turns out to be right or wrong, has a 160-acre spacing lease that it feels it can adequately drain with one well. IT has the right to do that. It certainly has the right to drill a dry hole, and it certainly has the right to believe that it might

be able to make a good producer here and recover oil that would not otherwise be recovered. That again, by definition, is in the interest of the prevention of waste and protection of correlative rights, and we don't think that there's any question but that TXO has carried its burden of proof here, and that we respectfully ask that the Examiner recommends to the Division that TXO's application be granted.

MR. STOGNER: Thank you, Mr. Dickerson.

Is there anything further in Case Number 7895?

This case will have to be readvertised for the July 6th, 1983, Examiner Hearing. Therefor, this case will remain open pending that Examiner Hearing.

(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 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. 7895, heard by me on June 8 1983.

Michael E. Stogner, Examiner
Oil Conservation Division

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