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

28 May 1986

EXAMINER HEARING

IN THE MATTER OF:

Application of Amerind Oil Company for an unorthodox oil well location, Lea County, New Mexico. CASE 8904

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For Amerind Oil Co.: W. Perry Pearce
Attorney at Law
MONTGOMERY AND ANDREWS
Paseo de Peralta
Santa Fe, New Mexico 87501
and
J. Randy Turner
Attorney at Law
STUBBEMAN, McRAE, SEALY LAUGHLIN & BROWDER, INC.
Midland, Texas 79701

A P P E A R A N C E S

For Ernest Angelo, et al: James G. Bruce
Attorney at Law
HINKLE LAW FIRM
P. O. Box 2068
Santa Fe, New Mexico 87501

I N D E X

I N D E X CONT'D

E X H I B I T S

MR. STOGNER: Call next Case Number 8904.

MR. TAYLOR: The application of Amerind Oil Company for an unorthodox oil well location, Lea County, New Mexico.

Call for appearances.

MR. PEARCE: Mr. Examiner, I am W. Perry Pearce of the Santa Fe law firm of Montgomery and Andrews, P. A., appearing in this matter on behalf of applicant, Amerind Oil Company.

Appearing with me is Mr. Randy Turner of the Stubbeman firm in Midland.

We have two witnesses who need to be sworn.

MR. BRUCE: Mr. Examiner, my name is Jim Bruce from the Hinkle Law Firm in Santa Fe, and I am representing a large group of opponents to this case, who will be identified shortly.

MR. STOGNER: Are there any other appearances?

Mr. Bruce, do you have any witnesses?

MR. BRUCE: I have two witnes-

ses.

MR. STOGNER: Will all witnesses please stand at this time?

(Witnesses sworn.)

BILL SELTZER,

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

DIRECT EXAMINATION

BY MR. PEARCE:

Q Thank you, sir. For the record would you please state your name, your place of employment, your occupation?

A My name is Bill Seltzer. I live in Midland, Texas, and I am an independent landman and I am a land consultant for Amerind Oil Company.

Q Mr. Seltzer, have you previously testified before the Oil Conservation Commission or one of its examiners and had your qualifications as a petroleum landman made a matter of record?

A Yes.

Q Mr. Seltzer, how long have you had dealings with land matters related to New Mexico?

A Thirty-five years.

Q And are you familiar with the application of Amerind Oil Company in this case and the land ownership matters relating to the area embraced by this application?

A Yes, I am.

MR. PEARCE: Mr. Examiner, are the witness' qualifications acceptable as an expert in the field of petroleum land matters?

MR. STOGNER: Are there any objections?

Mr. Seltzer is so qualified.

Q Mr. Seltzer, briefly for the record would you explain what Amerind seeks in this case?

A Amerind seeks an order approving an unorthodox well loation in the Strawn formation underlying the west half of the northeast quarter of Section 29, Township 16 South, Range 37 East, Lea County, New Mexico.

Q All right, sir, if I could ask you at this time, please, to refer to what has been marked as Amerind's Exhibit Number One, discuss that for the Examiner, please?

A Exhibit Number One is a plat showing a six section area with wells on that area noted on the plat, as well as the proposed well location in the west half of the northeast quarter of Section 29. Amerind is the opera-

tor of this proposed unit.

Q All right, sir, moving along, I'd ask you to please refer to what we've marked as Exhibit Number Two to this proceeding and discuss for the examiner and those in attendance the contents of this exhibit.

A Exhibit Number Two is a list of offset operators and my letter, a copy of my letter, sent to each by certified mail notifying them of Amerind's application for an unorthodox location, along with a copy of receipts that were sent by certified mail, return receipt.

Q All right, sir, and in your position as a land consultant for Amerind have you been advised as to Amerind's plans for the drilling of a well in the area embraced by this application?

A Yes. Amerind proposes to drill a well in the west half of the northeast quarter at an unorthodox location to approximately -- approximate depth of 11,600 feet in order to test the Strawn formation.

Mr. Leibrock will testify further as to the geological reasons for seekign this unorthodox location.

Q And does Amerind seek -- find it necessary to seek expedited approval of this case?

A Yes. If an order is approved today Amerind is prepared to move in a rig on the location prior to July 1, 1986, in order to conform with the terms of our

farmout agreement with Wiser Oil Company, who is the owner of this -- the fee owner of this -- not the fee owner but the leasehold owner of this proposed tract.

Q And after your review of the records relating to this tract and surrounding tracts do you believe that you've complied with the notice provisions of the Division rules and regulations in notifying offset operators?

A Yes.

Q And that is demonstrated by Exhibits One and Two, is that correct, sir?

A That's correct.

Q In your opinion will granting of Amerind's application be in the interests of conservation , prevention of waste, and the protection of correlative rights?

A Yes.

Q Were Exhibits One and Two prepared by you or under your diretion and supervision?

A Yes, sir.

Q Thank you.

MR. PEARCE: I have nothing further of this witness on direct, Mr. Examiner.

I would move the admission of Amerind Exhibits Number One and Two.

MR. STOGNER: Are there any objections?

Exhibits One and Two will be admitted into evidence.

MR. BRUCE: I have one question, Mr. Examiner.

MR. STOGNER: Mr. Bruce, your witness.

CROSS EXAMINATION

BY MR. BRUCE:

Q Mr. Seltzer, what was the date you said you had to move a rig on to comply with the --

A July 1.

Q Thank you.

MR. BRUCE: Nothing further.

MR. PEARCE: Nothing further of this witness, Mr. Examiner?

MR. STOGNER: I don't believe so at this time, Mr. Pearce. He may be excused.

MR. PEARCE: Call next Mr. Leibrock.

ROBERT C. LEIBROCK,

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

DIRECT EXAMINATION

BY MR. PEARCE:

Q If you would, please, sir, for the record, state your name, place of residence, and your occupation.

A My name is Robert C. Leibrock. I live in Midland, Texas, and I'm Vice President of Amerind Oil Company.

Q What are your responsibilities as Vice President for Amerind?

A A charge of exploration and field development and other matters.

Q Mr. Leibrock, have you previously testified before the Division as a qualified petroleum engineer?

A Yes.

Q And are you familiar with the -- Amerind's application for an unorthodox location in this case?

A Yes.

MR. PEARCE: Mr. Examiner, are the witness' qualifications acceptable in the field of petroleum engineering?

MR. STOGNER: Are there any objections?

He is so qualified.

Q All right. Mr. Leibrock, at this time, if you would, I'd ask you to refer to what has been marked as Amerind Exhibit Number Three and discuss the contents of that exhibit for the examiner and those in attendance.

A Exhibit Three, first of all, I'd like to note the names of three locations in the northeast quarter of Section 29.

The Cal-Mon State No. 29 Well, which is in Unit A. The proposed Wiser B State Well, in Unit B, which is highlighted in red. And the Wiser Cal-Mon State dry hole in Unit G.

These names are similar and are somewhat confusing so in my testimony I'd like to refer to them only by their grid unit designations, A, B, and G.

Exhibit Three is a structure map contoured on top of the Lower Strawn Lime. The Strawn reservoirs are shaded in green.

Note that the producing areas are on structural noses and dry holes, for the most part, lie off the noses.

The noses are the expression of Strawn limestone ridges with very steep sides, as I will show later.

The trapping mechanism in all the reservoirs is up-dip or southwest porosity pinchout.

I would like to review the history of Amerind's wells in the Northeast Lovington Penn Field because it is pertinent to our choice of location for the referenced well.

In November, 1983, Amerind plugged and abandoned its first test in the area, the 29-G, which is located in the same proration unit as the proposed 29-B location.

Next three producing wells were drilled in Section 21, four wells in Section 28, followed by the 20-A Well, which was completed early this year. This well had produced ovr 36,000 barrels of oil as of the end of April and is currently flowing about 350 barrels of oil a day.

In summary, Amerind has drilled eight producing wells and one dry hole in this field, a success ratio which exceeds that of any other operator in the Northeast Lovington Penn Field or any other field in this Strawn trend, and we are convinced that the key to this success is in correctly identifying these structural noses to which I've had reference.

Our 29-G dry hole in Section 29 was drilled on what was thought be a nose based on the limited subsurface control we had at the time but the control provided by it was nevertheless very important in locating future wells.

The nose is now well defined be wells drilled by Amerind and the Texaco Montieth No. 2 in the southeast quarter of Section 20, which was completed earlier this month flowing 532 barrels of oil per day.

Therefore, based on our experience in the immediate area, drilling at a regular location on Unit B might result in a successful well but the history of the area clearly indicates it would not be a prudent location.

Now, further support for the proposed location is given by recent drilling in the Shipp Strawn Field in Section 4 of Township 17 South, Range 37 East.

If you would please refer to Exhibit Four, which is highlighted in pink, on this exhibit, on the key map you'll note that the Shipp Strawn Field is some two to three miles south of the -- of our proposed location and the highlighted cross section A-A' through the Shipp Field, I would like to make a note of.

Note the Chevron dry hole on the left side of the cross section is only 1,215 feet from the Tipperary State No. 2 Well and more particularly note on the other end of the same cross section that the Pennzoil Shipp Estate No. 2 dry hole is only 840 feet from the Tipperary State No. 1, and I would also like to note that it is my understanding that the Pennzoil was not considered an unorthodox location in this particular case.

I also would like to note that each Tipperary well has flowed at the allowable since being put on production several months ago, so the main point I would like to make from this cross section is showing how abruptly the reservoirs go from very good to nonexistent reservoir quality.

Okay, one other item provided on this key map of the same exhibit, in Section 24 just to the northeast of the Shipp Field, note that the C&K Shipp No. 34-2, the well is only 900 feet from the Mesa West Knowles No. 7 dry hole.

The C&K Well had produced over 250,000 barrels as of the end of 1984.

Okay, if you'd now please refer to Exhibit Five, which is highlighted in orange.

This cross section B-B' shows the relationship of the 29-B location to adjacent wells and dry holes.

Note that the proposed location of the 29-B is 1,034 feet from our 29-A Well. On the previous cross section I have pointed out two dry holes that are closer than this to excellent wells, so it is clear that well location is extremely important and why the 29-B must be drilled at the proposed location which lies on the axis of this nose.

Q Mr. Leibrock, you testified earlier about the 29-G Well, which was a dry hole Amerind previously drilled.

Could you discuss your expert opinion on the impact of the information gained from that well on the south half of the northeast quarter of Section 29, generally, both as --

A Well --

Q -- regards the east half and west half of that quarter section.

A Okay, the south half of the northeast quarter.

Q Yes, sir.

A Okay. No one can say with certainty on any particular area here, but we feel that in general that whole south half northeast quarter is likely to be nonproductive.

Q Roughly, sir, if you believe that a portion of the west half of the northeast quarter of 29 should be expected to be unproductive, based upon that dry hole, what proportion of each of those 80-acre tracts would you expect to be productive and what proportion would you expect each of those tracts to be productive?

A Okay, first referring to the northeast of the northeast of 29 where the current well is producing --

Q Yes, sir.

A -- the A Well, in our judgement, based on the points I've discussed, we feel like approximately 2/3rds of that area is probably productive and about the same amount of the proposed B location.

Q All right, sir. Could you discuss, please, for the examiner and those in attendances, if you know, and I regret not having asked Mr. Seltzer to address this, what type of land do we have in this area? Section 29, the northeast quarter, do you know if that is State or Federal acreage?

A The whole northeast is all State acreage.

Q And as to the southeast quarter of Section 20 immediately above, is that State, fee, or Federal acreage?

A It is all fee acreage.

Q And how about the southwest quarter of Section 21?

A The southwest of 21 is all fee acreage, and the northeast, I mean the northwest of 28, also.

Q Do you have anything further to offer at this time, Mr. Leibrock?

MR. PEARCE: Mr. Examiner, we have nothing further at this time.

I would move admission of Amer-

ind's Exhibits Three, Four, and Five, and would tender the witness.

MR. STOGNER: If there are no objections Exhibits Three, Four, and Five will be admitted into evidence.

Mr. Bruce, your witness.

CROSS EXAMINATION

BY MR. BRUCE:

Q Mr. Leibrock, would you refer back to your Exhibit Number Three, please?

What is the significance of the green colors on the structure map?

A The green represents to the best of our judgment the limits of each of these reservoirs in this trend.

Q Does the darker green signify where your -- where there is production?

A In general, although that doesn't, you know, necessarily have that clear significance.

Q Just for the record, Mr. Leibrock, are you recommending approval of this application without a penalty?

A Yes, I certainly am.

MR. BRUCE: I have nothing fur-

ther, Mr. Examiner.

MR. STOGNER: Thank you, Mr. Bruce.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Leibrock, referring to Exhibit Number Five for the Cal-Mon 29 State Well No. 1, where are the perforations? It doesn't look like they came through very good.

A Okay. You're right, they didn't. They're from 11,299 to 11,354.

Q And for the Higgins Trust, Inc. No. 2?

A Let's see, we've got it down here on the bottom, also, Mr. Stogner, which I --

Q Oh, well, that would be 11,387 to 11,470, then.

A Right. I was off a foot on that previous well, 353 at the bottom.

Q Pretty large. Referring back to Exhibit Three, do the green shaded areas signify porosity, permeability?

A They signify our reservoir rights, so both porosity and permeability.

Q Were you able to contour in any way other

than with the green shaded area?

A Well, my only purpose in making this map was to show the relationship between the structural nosing and the -- and the reservoir configurations in general. No one can say precisely where the edges of the reservoir are, while you can say with quite a degree of confidence that there is a relationship between the structural nosing and the reservoir location.

Q And to your best ability, if this well was a standard location it would be out of the green shaded area?

A That's our best judgment based on our history of the area, which, as I noted, has been considerable.

Q Do you know what a standard location in this particular pool would be?

A Oh, anything within 150 foot radius of the center of a quarter quarter section.

Q The Cal-Mon 29 State Well No. 1, let me see, you show down there 489 barrels of oil per day. Is that presently producing?

A Yes. It's currently producing about 350 a day.

Q Is that flowing or on pump?

A It's flowing.

Q What, according to the depth bracket allowables is the maximum allowable allowed for a well of this depth?

A 445 barrels per day.

Q So that you have essentially slipped under that, have you not?

A Yes.

Q And that is for an 80-acre proration unit, correct?

A Yes, sir.

MR. STOGNER: I have no questions for Mr. Leibrock at this time.

Are there any other questions of this witness?

If not, he may be excused.

Mr. Pearce?

MR. PEARCE: Nothing further, Mr. Examiner.

MR. STOGNER: Thank you, Mr. Pearce.

Mr. Bruce?

JAMES D. COBB, JR.,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q Would you please state your full name and place of residence?

A James D. Cobb, Junior. I live in the City of Midland.

Q What is your occupation and who do you represent in this case?

A I'm a geologist and I'm representing a large group of individual working interest owners that are mineral and working interest owners that are under the Cal-Mon State 29, which is a direct east offset to the proposed Wiser B.

Q And are these interest owners listed on Exhibit A?

A Yes, that is Exhibit A.

Q Have you previously testified --

MR. BRUCE: Rather than read those into the record, Mr. Examiner, I don't think that's necessary, since there are so many of them.

MR. STOGNER: Are these the interests in which you represent, Mr. Bruce and Mr. Cobb, this list (not clearly understood) here today?

A That is right.

MR. BRUCE: That's correct. Call them Ernest Angelo, et al.

Q Mr. Cobb, have you previously testified before the OCD and had your credentials as a geologist accepted as a matter of record?

A Yes.

Q And are you familiar with Case 8904 and the geological matters involved therein?

A I am.

MR. BRUCE: Mr. Examiner, is the witness considered qualified?

MR. STOGNER: Are there any objections?

MR. PEARCE: No objections.

MR. STOGNER: Mr. Cobb is so qualified.

Q Mr. Cobb, will you please refer to Exhibit B and describe its contents?

A Okay, Exhibit B is a structure map and the only purpose in showing this structure map is to show that there is no structural closure on any of these producing zones; that it is strictly a stratigraphic trap, just as Mr. Leibrock has testified.

Q And is it drawn on the top of the Lower Strawn?

A Yes, it's drawn on the top of the Lower Strawn. The yellow dots on the map indicate Permian production and the blue indicate Lower Strawn production.

Q Thank you. Would you please now move on to Exhibit C and describe its contents?

A Okay. Exhibit C is strictly an Isopach map of the Lower Strawn interval and it shows the carbonate development where the thickness occurs and there's really no relevance to the productive area.

Q Will you please now move on to Exhibit D and describe it?

A Okay, Exhibit D is a net effective pay map. This map is based on the 4 percent cutoff where neutron logs are available. It represents what I call the algal mounds or the build-ups and to me depicts the reservoir as best we know how. It --

Q Based on this exhibit and your other exhibits, in your opinion what percentage of the acreage of the west half northeast quarter is productive?

A I consider approximately one-third of the west half of the northeast quarter to be productive.

Q And this limited -- is the productive acreage in the west half northeast quarted limited by dry holes in the area?

A It is . It's limited to the south and

west by the Wiser No. 1-A.

It's limited by the Gulf well immediately west and also a well immediately northeast. All of these have no porosity. It's confirmed not only by electric logs but by drill stem tests where they actually did not encounter any reservoir.

Q Thank you. Would you now please move on to Exhibit E and describe this for the examiner?

A Okay, Exhibit E is a cross section very similar to the one you've previously seen. It's hung on the Lower Strawn and again it puts the presence of the reservoir, the perforations in Cal-Mon State 29 and the absence of reservoir in the wells immediately west, to the southwest in the Wiser, and immediately west in the Gulf Lea State BV.

Q Do you have anything further on that exhibit?

A I don't believe so. It just shows the truncation and the limiting of the reservoir.

Q Based on these exhibits that you've constructed, in your opinion what -- again, what portion of the acreage in the west half northeast quarter is productive?

A In my opinion one-third of the acreage would be productive.

Q And do you have an opinion as to a production allowable for the proposed unorthodox well?

A Yes, we do, but I think I'd rather wait for Mr. Akins to present that.

We do not think that this well should be allowed to have a productive allowable any greater than one-third and actually feel that it should be less.

Q Were Exhibits A through E Prepared by you or under your direction?

A Yes, they were.

Q In your opinion will the granting of this application without the imposition of a production penalty be in the interest of conservation and the protection of correlative rights?

A Yes, I do. I believe that it will.

Q I'll repeat that again.

A Okay.

Q Will the granting without the imposition, will the granting of the application without the imposition of a penalty be in the interest of conservation?

A No, it won't. I think this well should definitely have a penalty.

MR. BRUCE: At this time I move the admission of Exhibits A through E, Mr. Examiner.

MR. STOGNER: Are there any objections?

Exhibits A, B, C, D, and E will

be admitted in evidence at this time.

Mr. Pearce, your witness.

MR. PEARCE: Thank you, Mr. Examiner.

CROSS EXAMINATION

BY MR. PEARCE:

Q Thank you, Mr. Examiner. Mr. Cobb, if you would, please refer to what you've marked as Exhibit D.

A Okay.

MR. STOGNER: That's D as in dog?

MR. PEARCE: D as in dog, Mr. Examiner.

Q I notice that going, Mr. Cobb, through the -- something near the center of the west half of the northeast quarter of Section 29 there is a heavier blue line. Do you see the line I'm referring to, sir?

A I'd like for you to point it out, please.

Q All right, sir. I am referring to that line --

A Right.

Q -- between the proposed location and the dry hole.

Could you tell me, sir, what control you

have to the west for the placement of that line?

A We have a zero -- that is the zero line beyond which I feel there is no effective pay.

The control is the well, the Wiser Well, and you're just interpreting between the Wiser Well and the Cal-Mon State 29. Those are your two control points between which you must have three lines, zero, 20, and 40.

Q And so between those two points, other than those you have no other control for where you've interpreted that line to be.

A That's right. It could be a lot farther east where there would be less productive acreage than I've shown.

Q And it could be further west, since you've --

A It couldn't be much because it couldn't be beyond the well, the Wiser Well No. 1-A, which has zero porosity, effective pay.

Q All right, sir, let's look back, if we could, please, to Exhibit C, as in Charles.

A Okay.

Q Could you refresh my recollection, sir, about the contents of this exhibit, please?

A Okay, this is just a total thickness map showing -- it's an Isopach map showing the thickness of the

Lower Strawn interval.

The T's indicate where I feel that the well has totally penetrated the interval and the P's are only partial penetration; therefore they're not honored with the contours.

Q All right, sir. All right, looking at the southwest quarter of Section 20, I notice two locations 310 question mark. Could you address that, please?

A Okay, that is questionable whether it actually penetrated it. I feel like the well probably did penetrate the section but it did not show on the log.

Q And that well was dry?

A Which well? 310, yes, that well is dry.

Q The well due south of there --

A It's called the Lumpkin Well.

Q Okay, due south of the Lumpkin Well is the Texaco Montieth Well.

A Right, a recent completion (not clearly understood.)

Q Do you have any information on initial potential of that Texaco Montieth Well?

A I do not have the exact. I have 530-some odd barrels, as I understand it was comleted at; 536, but I don't have a scout ticket on it.

Q All right, sir. I notice that the line

just to the west of the proposed location, between the proposed location and the arrow, do you see the line I'm interested in?

A Yes, sir, uh-huh.

Q The dry hole to the southwest of the proposed location sits just about exactly on that line, is that correct?

A Uh-huh, that's right.

Q I notice that in the north half of Section 20 there are two wells, one that has 280-T and one that has 262-T. Do you see those two wells?

A 262-P?

Q P, I apologize.

A Yes.

Q Could you give me your expert opinion, please, sir, on the reason that those two wells should be completed straddling that particular Isopach line and yet the well in the west half of the northeast quarter of 29 should be a dry hole?

A Well, as I said when I presented this exhibit, I feel that the thickness of these -- this unit is irrelevant to where the production is.

We have many wells that are thick and tight and we have some wells that are as thin as a 140 that have been good producers. It's the development of the

porosity within this interval.

Q And to what do you attribute the development of that porosity?

A I attribute the development of the porosity to being algal mounds that were exposed at the surface as they were being deposited, which developed porosity within those units.

Q All right, sir, let's look back at Exhibit B. I apologize for cutting you off.

A That's okay. Exhibit B.

Q Yes, Exhibit B, sir. Refresh my recollection about your interpretation of the structure shown on this map, please, sir?

A My interpretation of the structure is that it is irrelevant again to the production. It has no closure on it or relatively little that can be mapped, and therefore this interval is strictly a stratigraphic trap, being trapped by up-dip porosity termination.

MR. PEARCE: Okay, I don't believe I have anything further at this time, Mr. Examiner.

MR. TURNER: I've got a couple of questions.

MR. STOGNER: Mr. Turner.

CROSS EXAMINATION

BY MR. TURNER:

Q Mr. Cobb, when you opened your presentation, you stated the nature of the interest in the -- of the parties that you're representing as mineral interest owners and what else?

A Potential working interest owners. I don't think -- well, they're working interest, they will back in as working interest owners at payout, as it states on the second sheet there. It shows the overall interest.

Q Okay. And what it the present -- the present nature of their interest?

A I think it's strictly as overrides and royalty interest, and then at payout some of them will back in.

Q Okay. That's all the questions I have.

MR. STOGNER: Are there any other questions of Mr. Cobb?

I have none at this time. If there are no other questions of Mr. Cobb, he may be excused at this time.

Mr. Bruce.

G. THANE AKINS,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q Will you please state your name and city of residence?

A I'm Thane Akins, Midland, Texas.

Q What is your occupation and who is your employer?

A I'm a petroleum engineer and I'm today representing the same persons that are listed on Exhibit A.

Q And have you previously testified before the OCD?

A No, I have not.

Q Would you please give a summary of your educational and work history?

A Graduated from Abilene Christian University and from Texas Tech with degrees in petroleum engineering and pre-engineering, and I worked almost twenty-five years for Atlantic Richfield, serving in various capacities of responsibility as an engineer in West Texas and New Mexico.

I served as Engineer Manager for the past almost five years for O'Briant Engineering, which is a consulting firm in drilling and workover supervision, as well as other reservoir engineering and economic evaluation work;

also served as Operation Manager for Omar Operating Company in the operation of a number of wells in Texas; also appeared before the Railroad Commission on numerous occasions in the past twenty-nine years.

Q Are you familiar with Case 8904 and the engineering matters pertaining to that case?

A Yes, I am.

MR. BRUCE: Mr. Examiner, are the witness' credentials considered acceptable?

MR. STOGNER: Are there any objections?

MR. PEARCE: No objections.

MR. STOGNER: The witness is so qualified.

Q Mr. Akins, would you please refer to Exhibit F and describe it for the Examiner.

A This particular exhibit is an expanded version of a portion of the area covered on Exhibit B, which is the net effective pay map. I have shown on this exhibit just the area surrounding the acreage in question, particularly the northeast quarter of Section 29. This is on a scale of one inch equals 330 feet.

I have, by planimetering methods, determined that the -- based upon this map -- that the productive acreage underneath the Amerind Wiser B Tract the 80-acre

proration unit would be approximately 33.9 percent of that 80 acres.

I've also looked at the net pay under this northeast quarter of Section 29 and based upon this map again, the east half of this northeast quarter, the Cal-Mon 29 Tract calculated approximately 2,800 acre feet underneath that 80 acres.

Underneath the Wiser B Tract, the west half of the northeast quarter, based upon this map I have calculated only about 300-acre feet in the productive area under that tract. Therefore, if you look at these two tracts together the northeast quarter is one total tract of net effective pay. The Wiser B well would only have about 9.8 percent of the total acre feet underneath that quarter section. It is clear by this that the full allowable for the Wiser B Tract would certainly drain substantial reserves from the east half of that quarter section.

Q In your opinion -- well, would you please move on the Exhibit G and discuss that to the Examiner.

A Exhibit G is several decline curves plotted on the surrounding wells in this immediate area. These are plotted on semilog paper rate versus time. The vertical scale is in barrels of oil per month in each case and, of course, the horizontal scale being divided into months of time.

I have plotted the Amerind State No. 1, the Amerind Higgins No. 2, the Texaco Montieth No. 2, Two, the Amerind Cal-Mon 29 and State No. 1, and also have made up a declined for the proposed Wiser B No. 1 Well. What I have tried to do with this particular exhibit is to demonstrate the typical decline curve of this field, realizing there are some that are different, some that are lower, some that are higher, but this is simply to treat all of these wells consistently with the same profile of decline. There are some wells that have a bit of history, for instance the State Number One has about a year and a half of history, the Higgins Number Two is also almost a year and a half, and I have taken that into account, of course, in this overall decline profile.

I have calculated the reserves from these individual plots. The case of the Wiser B, since there is -- since it is a proposed well -- what I have done because of its position on net effective pay amount being very similar to the State No. 1 Well, I have assumed that its performance would be similar to that State No. 1 Well and have graphed it accordingly.

Q I refer you to Exhibit H and ask you if you have calculated reserves for the State No. 1, Higgins No. 1, Montieth No. 2, Cal-Mon 29, State No. 1, and Wiser B wells?

A Yes, I have and on this exhibit I have shown the calculations both for the decline curve analysis as the previous exhibit would result in, and also have made some estimates again based upon the net effective pay map and other factors from study of logs by volumetric methods to come up with reserves by each well.

I think the obvious thing we see in this is volumetrically we have a certain amount of reserves by well depending upon what appears to be underneath that particular tract. We have, in every case, a higher amount of reserves assigned to each well if you do it on a typical decline curve analysis.

Q What is your reason for differential between the measurements of reserves for the wells?

A I believe because of the spacing of these wells and their proximity to each other, there will be severe interference as these wells continue to produce. The area of drainage will overlap. I believe each one of these wells can very likely drain 80 acres as is assigned by the field rules, but because of their spacing they will not, in effect, do that simply because of this, again, interference between the wells and their production, therefore, will be reduced to something less than what the typical well curve for the field would indicate. Therefore, in effect, I think what will happen is that the rates of decline as shown on

the previous exhibit will steepen as in appearance of curves and less reserve will be recovered.

Q Thank you. Would you please now move on to Exhibit I and describe its contents for the examiner.

A Exhibit I is the same plat with assumptions made that each well would drain 80 acres radially and that radial drainage pattern is superimposed upon this net effective pay map. As you can see by the overlap of the wells across each others pattern, interference certainly will occur where you have not only wells interfering with each other, that is two wells, you have as many as three wells actually overlapping in this drainage pattern. It also emphasizes with the proposed well just how much of that 80-acre drainage pattern would encroach if it indeed occurred in this pattern on to the Cal-Mon Tract or the east half of this quarter section.

Q In your opinion, would permitting the Wiser B Well to produce a full allowable -- would that drain reserves from the Cal-Mon 29 State No. 1 Well?

A I don't think there is any question that it would. Even if the drainage were skewed considerably from the radial it still would have to encroach upon where the pay is obviously the thicker part of the reservoir and with the kind of permeability that is indicated by the performance of these wells, I think it is unquestionable that

that kind of drainage across the lease line would occur and we certainly recognize that through the capture is in play in this case we also recognize, though, that the ideal situation is that everybody recovers the reserves under their lease and to grant a full allowable to this well would exacerbate the problem of additional drainage across lease lines.

Q In your opinion and based on your testimony, what penalty on production do you recommend for the proposed well?

A Again, ideally from the standpoint of the actual pay that we calculate to be underneath each one of these two tracts that are so much affected by this proposal, whereby the Wiser B Tract has approximate 10 percent of the net effective pay and therefore , approximately that same percent of the reserves of this northeast quarter section that we would suggest that 90 percent penalty.

Q In your opinion, will the granting of the application with the penalty you propose be in the interest of conservation and the protection correlative rights?

A I think it would, particularly the correlative rights of the people that we are representing in this case.

Q Were Exhibits F through I prepared by you or under your direction?

A Yes, except with the preparing of the net effective pay map was done by Mr. Cobb.

MR. BRUCE: At this time, Mr. Examiner, I move that the admission of Exhibits F through I.

MR. STOGNER: Any objections?

MR. PEARCE: No objection.

MR. STOGNER: At this time Exhibits F, G, H, and I will be admitted into evidence at this time.

MR. BRUCE: I have no further questions of the witness at this time.

MR. STOGNER: Mr. Pearce, your witness.

MR. PEARCE: Thank you, Mr. Examiner.

CROSS EXAMINATION

BY MR. PEARCE:

Q Mr. Akins, first if you would, please, let's look back to Exhibit No. F, the net effective pay in the Lower Strawn. I notice that the contour lines drawn on that are drawn so that they include all of the 80-acre tract on which the Cal-Mon State No. 1 Well is presently located. Did you draw those contours in that way?

A No, sir, Mr. Cobb constructed this map.

Q So you had no other control mechanism for indicating those contour lines to do that inclusive movement to the south, other than the control mechanism which Mr. Cobb had available to him, is that correct?

A That is correct.

Q If you would, sir, please, let's look at Exhibit No. H. The second column entitled Volume, the source of that is a planimetering of the contour lines which we just looked at in Exhibit F, is that correct?

A That's part of it. That is the acre feet portion of the formula used in calculating volumetric reserves. There are other factors beyond that.

Q And the fourth column of that document entitled decline, that is your calculation of reserves based upon the decline curves which -- I have forgotten -- were marked as Exhibit G. Is that correct, sir?

A That is correct.

Q All right, sir. If you could please look at what you marked as Exhibit I to this proceeding which is a demonstration of some radial drainage work. Did you do this work or did Mr. Cobb do this work, sir?

A It is his net effective pay map. The circles are simply drawn by me.

Q Okay, and you did the planimetering of the areas?

A Yes.

Q Did you, in the course of preparing for this hearing, planimeter or draw a circle at the closest standard location to the line in the west half of the northeast quarter of 29?

A Yes, sir.

Q And what is -- I'm sorry --

A I did not present that as a --

Q -- it is not demonstrated --

A No, no.

Q -- I am asking if you have done that.

A I have done it, yes, sir.

Q And what is the closest standard location to the proposed location?

A I believe 550 feet from that east line, or 510 feet, I am sorry.

Q All right, sir, and this well is --

A -- 330 from the east line.

Q So this well, then, is 180 feet closer to the east line than a standard location, is that correct -- 550 -- 510 and 330?

A Yes, yes.

Q In the course of doing that work, sir, did you planimeter the area between the radial drain circles at the nearest standard location and the proposed location?

A Yes, sir.

Q And how many acre feet were included in that, I suppose it is a half-moon shape like figure? Do you recall the acreage?

A Something less than a half-moon.

Q Yeah.

A I did not measure the acre feet, but just the acreage is approximately 8.6 acres, as I recall.

Q 8.6 acres, all right. Are you familiar with the rules for the northeast Lovington Penn Pool?

A Not in detail, no.

Q Do you know whether or not this well is a standard location from a north/south direction --

A Yes, it is.

Q It is a standard location north/south?

A Yes.

Q To summarize, it is standard north/south. It is 180 feet too far to the east to be a standard location and you found 8.6 acres of drainage area from the proposed location not covered by standard location. Is that correct, sir?

A That is my recollection of it.

Q One moment please.

MR. PEARCE: I have nothing further at this time, Mr. Examiner.

MR. STOGNER: Any redirect?

MR. BRUCE: Couple of questions, Mr. Akins.

REDIRECT EXAMINATION

BY MR. BRUCE:

Q Mr. Akins, I believe Mr. Pearce was referring to a method sometime used to calculate a production penalty on unorthodox locations by using distance and areas of a circle outside of the standard location. I think you are somewhat familiar with that, are you not?

A Yes, sir.

Q In your opinion, why is that method not -- should it not be used in this case?

A Well, I don't see any relationship, really, to the impact upon the adjacent tract by that method. It even appears to be contradictory within itself as to what it is trying to accomplish. I don't know its origin or anything, that much more about it, except it did not seem to be relevant in this case, certainly.

Q Does it take into account the large portion of the west half northeast quarter which is not productive?

A Yes, it -- well, it doesn't take it into account in the formula. It ignores it, in fact.

Q Does it consider the difference in the net pay from the proposed well to the Cal-Mon 29 State No. 1 Well?

A No.

MR. BRUCE: I have nothing further, Mr. Examiner.

MR. STOGNER: Mr. Pearce?

MR. PEARCE: I don't believe I have anything further of this witness. Thank you, Mr. Examiner.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Akins, let me see if I understand your writing. You are proposing a 90 percent penalty on the allowable -- what are you -- 90 percent of what?

A The top level, I understand, is 445 barrels a day .

Q All right. So it would be 90 percent of the top allowable?

A As penalty, yes.

Q Now, you get the 90 percent, if I understand this right, you look at the whole northeast quarter of 29 and the area within the northeast quarter bounded to the west by the zero line, is that right?

A Yes, sir.

Q And that being how many acre feet?

A There would be approximately 2,800 feet under the Cal-Mon Tract, that's the east half, and about 300 acre feet under the Wiser B Tract or the west half.

Q And you are basing it just on that?

A Yes.

Q Okay, so you are in essence telling me that regardless if he were in a standard location we should penalize him 90 percent.

A Well, if you say that, ideally, and here again we realize it's ideally, that everybody ought to have the opportunity to recover the reserves under their tract. That is what that particular penalty is saying. Now, I recognize as well as anybody that a well in a standard location, particularly with the configuration of this net effective pay map, that with full allowable that well will certainly recover the reserves off of the Cal-Mon Tract. That -- it's inequitable from the ideal situation where you just recover the reserves under your tract, but it is also a reality. But in this case they are asking to compound that problem that exists even in a standard location, and we don't believe that is equitable in protecting our working interest owners' correlative rights.

Q I am sorry, Mr. Akins, is that a yes or a

no to my question? Let me rephrase it. If he drilled a standard location, according to your method, he should be penalized 90 percent.

A Not 90 percent. It would be less. Oh, wait, yes. Under -- just under acres feet under that tract. Well, anywhere on that tract standard -- where -- yes.

Q Okay. So at the same time if he is right up against your line he should get 90 percent also.

A Yes.

Q So we're not taking account into the location of wells on your penalty.

MR. STOGNER: I have no further questions of this witness. Are there any other questions of Mr. Akins? Mr. Bruce? If not Mr. Akins may be excused. Mr. Bruce?

MR. BRUCE: I have no further witnesses.

MR. PEARCE: Mr. Stogner, at this time, if I may, I would like to recall Mr. Leibrock, who has been previously sworn and qualified.

MR. STOGNER: Let the record so show.

ROBERT C. LEIBROCK (RECALLED),

being recalled as a witness and having been previously sworn and remaining under oath, testified as follows, to-wit:

REDIRECT EXAMINATION

BY MR. PEARCE:

Q Mr. Leibrock, at this time I assume that you have just heard the testimony presented by Mr. Cobb and Mr. Akins indicating their belief that a 90 percent penalty is appropriate for this proposed non-standard location. At this time, sir, I would like for you to give me your expert opinion and the benefit of your experience in this specific area and address those presentations, if you would please, sir.

A If I could, Mr. Examiner, I would like to go back to my Exhibit Three and compare it to the Exhibit B, both of which are structure maps contoured on top of the lower strawn, and as you can readily see, there is a great deal of difference between the two even though they are using the same subsurface values in making the map. Certainly this type of variance is not unusual in making a map of this type, but what I would like to emphasize is that we feel strongly that our map is correct based on our experience, which we pointed out previously. We think the

character of these noses is, in fact, controlling the location of the production here or identifying the location of the reservoirs and that the presence of the nose coming through the northeast quarter of Section 29 does, in fact, identify the axis of this particular nose and consequently the reservoir and therefore, by being on this nose there is only one location really that the well can be located, and that is where we had staked it.

Q To review, what is your opinion as to the portion of both the east half and the west half of the northeast quarter of 29 in productive acreage?

A Okay, as I have stated previously, I think both of these areas are about two-thirds productive, and I did not make any detailed calculations trying to quantify more accurately than that as the opposition did because I think that is an exercise in futility, quite frankly.

Q That's good. Anything further at this time?

A No.

Q All right.

MR. PEARCE: Nothing further at this time, Mr. Examiner.

MR. STOGNER: Thank you, Mr. Pearce. Mr. Bruce?

RECROSS EXAMINATION

BY MR. BRUCE:

Q Mr. Leibrock, by moving the proposed Wiser B Well to a standard location would Amerind be off at the nose?

A We feel quite certain that we would be off to the nose to the extent that we probably, at best, would make a very marginal well.

Q By your -- referring to Exhibit -- Amerind Exhibit No. Three, does not that show that the bulk of the production would be coming from the east half of the northeast quarter?

A Well, again I did not show precise outlines. I used varying degrees of shading because in this trend I think that is the best anyone can do, and I think an attempt to quantify that more precisely is -- is a, you know, is not dealing in the reality. So I stand by what I said earlier, that I think that both of these quarter quarter sections contain roughly the same amount of reservoir volume.

Q Both quarter quarter sections?

A Yes, and I think particularly the attempt --

Q Which quarter quarter section?

A The northeast to the northeast and the northwest to the northeast.

MR. BRUCE: No further questions Mr. Examiner.

MR. PEARCE: If I may briefly, Mr. Examiner.

MR. STOGNER: Mr. Pearce.

REDIRECT EXAMINATION

BY MR. PEARCE:

Q Mr. Leibrock, you just restricted that answer to the quarter corner sections making up the north half of the northeast quarter of 29. What is your opinion with regard to the relative productive acreage in the southern quarter quarter sections in the northeast quarter of 29?

A Well, again, as I testified earlier, I think the -- probably almost the entire south half of the northeast is non-productive, and the main reason for saying that is because we feel that this is definitely not on a nose as I have contoured it here, so we don't think there is any basis for suggesting that there is any reservoir really anywhere in the south half of the northeast quarter.

Q All right sir. I show you what has previously been marked as Exhibit I and I would ask you to review the contours shown net effective pay on that exhibit and tell me if you can come up with any explanation for the shape of the contour lines as they are drawn on that exhibit.

A Well, I think, as I mentioned earlier, every geologist can use his own discretion to a large degree in contouring these things, and this thing, you know, is certainly a geological option, but we don't think the history of the area warrants this type of a contour. We think all of the evidence is against this coming down in this area.

Q And indicating coming down in this area here -- indicating the south half of the northeast quarter of 29?

A Yes, yes, sir.

Q Thank you.

MR. PEARCE: I have nothing further, Mr. Examiner.

MR. STOGNER: Thank you, Mr. Pearce.

Mr. Bruce?

RECROSS EXAMINATION

BY MR. BRUCE:

Q Mr. Leibrock, what is your estimate that the feet of pay at the proposed Wiser B at the location, or have you done this?

A I have not done that because, as your witness has pointed out, there is really not a great deal of relationship between that pay and productivity of the well, and we don't really spend any time trying to do that.

MR. BRUCE: Nothing further, Mr. Examiner.

RECROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Leibrock, in hearing all of the testimony, would you care to assess a penalty in this production?

A Could I be allowed to consult with our counsel please, sir?

Q Yes.

A Mr. Examiner, based upon the formula, which I don't have written down in detail, but the double circle formula, is that how it is commonly referred to -- based on that and the evidence that's been presented, our

calculations show at that point it would come up with roughly 15-1/4 percent penalty, and that, that we think would be equitable in this case.

MR. STOGNER: Thank you. Are there any other questions of Mr. Leibrock at this time?

There being none, he may be excused.

Mr. Pearce, do you wish to recall any witnesses?

MR. PEARCE: I do not, thank you, sir.

MR. STOGNER: Mr. Bruce, I just have one clarification question. Maybe one of your witnesses can answer this.

On Exhibit A I show that the working interest that is being represented here today is 29.7332 percent, is that about right?

MR. BRUCE: That is correct, but if -- but I believe that will be only after payout. I do not know if payout has yet occurred on this well. Right now it's just basically 4.65 percent override interest.

MR. STOGNER: Thank you. That's all I have.

Mr. Bruce, do you wish to recall anly witnesses?

MR. BRUCE: I do not wish to recall any witnesses.

MR. STOGNER: I believe we're ready for closing statements at this time.

Mr. Bruce, you may go first. Mr. Pearce, you may follow.

MR. BRUCE: Very briefly, Mr. Examiner, the evidence presented by Ernest Angelo, et al, we believe shows that approximately two-thirds of the west half of the northeast quarter of Section 29 is unproductive acreage. We believe that this would -- this alone would warrant a penalty of approximately 66 percent, however, a calculation of the acre feet of pay shows that the west half northeast quarter of Section 29 contains only 10 percent of the net pay in the northeast quarter. As a result the unorthodox location well will drain substantial reserves from the east half northeast quarter and Ernest Angelo et al, requests the OCD to enter an order imposing the 90 percent penalty on well production. We do not believe that the double circle method of calculating penalty adequately takes into account the geology and engineering factors discussed at the hearing. Thank you.

MR. STOGNER: Thank you, Mr. Bruce.

Mr. Pearce.

MR. PEARCE: Thank you, Mr. Examiner. Someone once described the Oil Conservation Division's proration system as a Ouiji Board connected to a computer. After listening to geologists and engineers this morning it occurs to me that what we've got here is a Ouiji Board connected to a drafting machine. The most experienced well operator in the area and the operator which drilled the well in which the opponents are having the interest has indicated that based on that experience and based upon his knowledge and education he believes that two-thirds of each of the tracts in question should be considered productive. They have testified that for the, I hesitate to say conveniently pinched out contour to the westerly direction, which cuts out so much of the acreage in the west half of the northeast quarter, there is not very good control to the west. Likewise, there is very poor control to the south, however, the operator who has drilled in this quarter quarter section twice and gotten one productive well and one dry hole, believes that the north half of that quarter quarter section is likely to be the productive acreage. The questions of drainage, of course, also relate to drainage that is not offset by counter drainage. I think we clearly have counter drainage in this area. The witnesses testified that the proposed location is, in fact, standard in a north/south direction, is 180 feet, which equates to 30 to

35 percent nonstandard in an east/west direction and that the circle calculation with a planimeter yields 8.6 acres gained at the nonstandard location, and that equates to 10.75 percent. Using the standard formula, dividing by the three factors, that comes up with a 15.25 percent penalty. I think the advisability of the divisions coming up with that formula is demonstrated in this case. In fact, there is not nearly as good a control as we would all like to have if we were to calculate with any precision what we are talking about. In the past the Division came up with the formula because it believed it was the most equitable means of balancing those interests and giving some impact to a multitude of factors. On that basis, Mr. Examiner, we believe that if any penalty is to be assessed, that that is the most equitable penalty. We have some hesitancy to recommend any penalty because we don't have as much control out here as we'd like to have. But, in terms of protecting correlative rights, I think we all recognize that a 90 percent penalty, which leaves you a 40 barrel a day well at 11,000 feet denies the correlative rights of the interest owners in the west half of the northeast quarter because we all know that that well will not be drilled to 11,500 feet for 40 barrels a day. I would therefore encourage the Examiner to review the method and if he applies a penalty, to use the long recognized and well used Division formula.

Thank you, Mr. Examiner.

MR. STOGNER: Thank you. Is there anything further?

MR. PEARCE: If I might, Mr. Examiner, we would like the opportunity to submit a proposed order in this matter.

MR. STOGNER: What particular time period would you --

MR. PEARCE: We are going to get it to you very quickly. As we indicated, we need an expedited order since we have a farmout which expires July the 1st of 1986.

MR. STOGNER: Mr. Bruce, would you care to submit a rough draft?

MR. BRUCE: I certainly would.

MR. STOGNER: What would be a good time period, a week?

MR. BRUCE: I don't think we will need that long, Mr. Examiner. I propose to have it to you before the end of this week.

MR. STOGNER: Friday is a holiday for us, we'll be at work Monday.

MR. BRUCE: Oh, that's right, Mr. Examiner. Monday?

MR. STOGNER: Monday at about 5:00 would be fine.

MR. BRUCE: Thank you, Mr. Examiner.

MR. STOGNER: Anything further in Case No. 8904 in which anybody would like to -- it appears there is none. Case No. 8904 will be taken under advisement. The hearing is now adjourned.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY 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. 8904, heard by me on 28 May 1986.

Examiner
Oil Conservation Division