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

24 May 1989

VOLUME I OF II VOLUMES

EXAMINER HEARING

IN THE MATTER OF:

Application of Midland Phoenix Corporation for an unorthodox gas well location and compulsory pooling, Lea County, New Mexico,	CASE 9667
and	
Application of Enron Oil & Gas Company for compulsory pooling, unorthodox gas well location, and non-standard gas proration unit, Lea County, New Mexico.	9669

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division:

For Midland Phoenix: Corporation:	Ernest L. Padilla Attorney at Law PADILLA & SNYDER P. O. Box 2523 Santa Fe, New Mexico 87504
For Enron Oil & Gas Company:	William F. Carr Attorney at Law CAMPBELL & BLACK, P. A. P. O. Box 2208 Santa Fe, New Mexico 87501

A P P E A R A N C E S Cont'd

For Robert E. Landreth,
Donna P. Landreth and
Leon Jeffcoat, Trustee:

W. Thomas Kellahin
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I N D E X

I N D E X Cont'd

E X H I B I T S

E X H I B I T S Cont'd

MR. STOGNER: This hearing will come to order.

I'm Michael E. Stogner. alternate examiner today and I'll be considering the two cases at this time.

I'll call Case Nos. 9667 and 9669, which were consolidated at the Examiner Hearing scheduled -- I mean held on May 10th, 1989.

Case No. 9667, being the application of Midland Phoenix Corporation for an unorthodox gas well location and compulsory pooling, Lea County, New Mexico.

And Case 9669, being the application of Enron Oil & Gas Company for compulsory pooling, unorthodox gas well location, and a nonstandard gas proration unit, Lea County, New Mexico.

For the record, gentlemen, would you please -- call for appearances, in other words.

I believe, Mr. Carr, Mr. Kellahin and Mr. Padilla, you were of record at the hearing on the 10th?

MR. CARR: That's correct.

MR. KELLAHIN: That's correct.

MR. PADILLA: That's correct.

MR. STOGNER: Are there any

other appearances here today that wasn't here on May 10th hearing?

There being none, let the record show -- or Mr. Kellahin, Mr. Carr, Mr. Padilla, did we swear in witnesses at that time?

MR. CARR: We did not, no.

MR. STOGNER: Okay, I'm going to ask all the witnesses, except for you, sir, to stand at this time and raise your right hands.

(Witnesses sworn.)

MR. STOGNER; Are there any statements before we get started, gentlemen?

MR. PADILLA: I don't have one, Mr. Examiner. I think the docket speaks for itself and I think the evidence is going to be sufficiently clear as to what the issues are in this case and where we'll be going in terms of proving our case.

MR. STOGNER: And you, Mr. Carr?

MR. CARR: I have no opening statement.

MR. STOGNER: Mr. Kellahin?

MR. KELLAHIN: No opening

statement.

MR. STOGNER: Thank you. Mr. Carr, Mr. Padilla, how would we like to proceed?

MR. PADILLA: I'll go first.

MR. STOGNER: Okay. Mr. Padilla?

BENTON CRAIG DUKE,

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

DIRECT EXAMINATION

BY MR. PADILLA:

Q Mr. Duke, for the record would you please state your full name?

A It's Benton Craig Duke.

Q What do you do for a living, Mr. Duke?

A I'm in the oil and gas business, exploration and production.

Q For what company?

A Midland Phoenix Corporation.

Q And you're a landman?

A Yes, sir, that's correct.

Q Are you an officer of the corporation as well?

A No, sir.

Q Okay. Are you, Mr. Duke, familiar with what has transpired in this case up to today?

A Yes, sir, I am.

Q Insofar as the compulsory pooling portion is concerned and the land matters?

A Yes, sir, I am.

Q And you're a landman.

A Yes, sir, that is correct.

Q Have you previously testified before the Oil Conservation Division and had your credentials accepted as a matter of record?

A Yes, sir, I have.

MR. PADILLA: Mr. Examiner, we tender Mr. Duke as a petroleum landman.

MR. STOGNER: Are there any objections?

MR. CARR: No objections.

MR. STOGNER: Mr. Duke is so qualified.

Q Mr. Duke, can you briefly tell us about the application that has been made in this case, Case No. 9667, that was made by Midland Phoenix Corporation?

A Yes, sir. We made application for compulsory pooling for an east half proration unit to drill a

Morrow well at a standard location in the east half.

Q Are you also asking for compulsory pooling in the east for all the nonconsenting interest owners --

A Yes, sir.

Q -- in this east half?

A That is correct, for all nonconsenting parties and/or mineral owners.

Q Okay. Let me hand you what we have marked as Exhibit Number 1 and have you briefly go through that and tell us what that is and what it contains.

A This is an application for an unorthodox location and compulsory pooling before the Oil Conservation Division of the State of New Mexico. It basically sets out what our -- what we're -- what we are trying to do, with the exception of the unorthodox location has since been dropped and so we're strictly going with compulsory pooling for an east half proration unit.

Q Okay, would you go through the rest of that exhibit and tell us what that contains?

A It stated that certain working interest owners in the east half who have not consented to drill the well we're proposing to compulsory pool their interest.

It also states that the nonconsenting working interest owners did not have to pay their share of

the estimated well cost and we could ask for an additional 200 percent penalty there for our risk involved in the drilling of the well.

It further says that we are also asking to be authorized to withhold from production a reasonable supervision charge attributable to each -- proportionately reduced to each nonconsenting party's working interest, or unleased minerals during the drilling and production stages of the well.

And also we're asking, we're drilling any unnecessary wells, we're trying to protect the correlative rights of our royalty owners and to afford the owners of each interest in the proposed proration unit the opportunity to receive or to get his oil and/or gas from that .

Q Has that application been sent to all the nonconsenting working interest owners?

A Yes, sir, it has.

Q And attached to that exhibit do you have evidence of a receipt from those nonconsenting working interest owners?

A Yes, sir, I believe -- yes, sir, we do, certified return receipt requested.

Q Mr. Duke, let me hand you now what we have marked as Exhibit Number Two and have you tell the examiner what that is.

A This is a land plat covering the east half of Section 34, Township 24 South, Range 34 East, and basically it breaks down from the records in Lea County the best that we could conceive or contrive the working interest to be in this east half proration unit.

Q And what percentage does Midland Phoenix have in the east half of that proration unit?

A A rough -- Midland Phoenix has roughly 41 percent as is listed on this plat, and we are in control of roughly 51.5 percent.

Q Does that plat show the location of the proposed well?

A Yes, sir, it does.

Q And is that at a standard location?

A Yes, sir, 1980 from the south, 1980 from the east line of Section 34.

Q Okay. Do you have anything further concerning that exhibit?

A No, sir.

Q Okay. Let's go on now to what we have marked as Exhibit Number Three and have you identify that for us, please.

A This is the well proposal by Midland Phoenix Corporation, dated March 22nd, 1989, wherein we proposed a well at that time at an unorthodox location for

the drilling of a 15,800 foot Morrow test. The estimated dry hole costs were listed on there, as well as the estimated completed well costs, and these were taken directly off of an AFE that was prepared by our engineers.

We also, in lieu of the parties that were presented this invitation to participate, we also offered to accept a farmout from them with certain provisions there. We asked for a response at their earliest convenience as that we would like to spud this well as soon as possible and upon hearing back from any of these parties we would forward a formal AFE and an operating agreement by which this well would be drilled under.

Q Mr. Duke, from whom did you hear with regard to that proposal?

A We heard from Enserch Exploration, Incorporated, from Mr. Dave Leverton. He stated that Enserch did not wish to do anything at this time. They did not want a well drilled and that they would oppose us at a hearing here in Santa Fe, and those are the only people that we heard from at that -- at that particular point in time.

Q Well, looking at Exhibit Number Two, can you go down that list and tell us what -- what communications you have had with the noncensenting working interest owners as shown in that Exhibit Number Two?

A As to J. Howard Moore, Limited, we have -- they are with us and we, you know, they are going with whatever we decide to do.

Enserch Exploration, as I stated, they just decided to do nothing. We did not hear back from Enron Oil & Gas until we received a notification of compulsary pooling and an unorthodox location from them on or about, I believe it was around April the 19th or the 20th, somewhere in that area.

We did contact Samedan. We did have some communication with them. Several weeks after our proposal went out they came down and we visited with them at length. They decided they were going to go with Enron.

Mr. Landrith also came over and we visited with him. He did not know what he would like to do at that particular point in time; didn't know which way he wanted to go, and we assume that Mr. Jeffco (sic) that interest, the way I understand it, strictly hearsay, that that is a trust set up for Mr. Landrith's kids and that Mr. Landrith, whatever he does, that the trust -- that Mr. Jeffco, being a trustee, would also do.

And that's all we heard.

Q You haven't heard back from the trustee?

A No, sir, we just talked with Mr. Landrith.

Q Did Mr. Landrith give you any indication that he was speaking for the trust?

A Yes, sir, he did.

Q Let's go on now to the rest of Exhibit Number Three and have you tell us briefly what each of the documents attached to that exhibit, other than the first letter --

A Okay, the first letter, as I stated, went to -- well, I have not stated but I will now -- went to Enron Oil & Gas, Enserch, Samedan and Leon Jeffcoat as trustee.

We sent a separate letter dated the same date to Mr. Landrith for the simple reason he has every kind of possible interest you can have in there, contractual interest, leasehold interest, and unleased minerals, and so we felt to address all the different kinds of interest that he had in there that we would need to send him a separate letter and stating so, where -- the only additional information on there was the same basic deal proposed in the letter to the other parties except on his unleased minerals if he did decide to -- if he did decide that he would like to give an oil and gas lease, we would accept one on the following terms, which did not apply to the other working interest owners in there.

The next letter is dated May 11th where-

in after our hearing, or the first hearing up here on the 10th, we sent out a letter to Enron Oil & Gas Company whereby we proposed the same well, just changing our location to a standard so they would be on notice that it was, even though at the hearing we had dropped the unorthodox location.

Q Have you had any communications or meetings with Enron since May 10th?

A Yes, sir, we have, extensive communications with them.

Q Can you tell us about those communications to the best of your knowledge?

A To the best of our -- to the best of my knowledge we have tried, have been visiting with Enron and have tried to make a deal with them, realizing that we were not going anywhere and that nobody was going to win in this situation, and wanted to work out some sort of an amiable, you know, type situation, whereby, you know, if they were adamant about drilling the well at their location, that we would, you know, consider selling out to them, you know, or some -- something like that, or join us in an east half proration if they wanted to do that, or, you know, just -- just got communications going for the first time to try to get something worked out.

Q Did you work something out?

A No, sir, we have not.

Q Did you come close?

A We felt we were close at one point but with the Midland Division office and Houston management evidently did not see it the same way that the Midland Division office did and so we had to go ahead and come up here and we're still communicating.

Q Okay. What else do you have in that exhibit?

A Samedan, we never heard back from them from the standpoint -- we sent a letter also on May the 11th to Enserch, Samedan and Leon Jeffcoat, Trustee. The same letter was sent to Enron, basically changed the location.

Then we sent one also on May 11th to Mr. Bob (unclear) of Enserch. We never heard anything back from them. We just assumed by their original letter they were just going to wait and assumed that they would probably go with Enron.

Samedan, the same thing. They had told us that they were just going to wait and see what happened at the hearing and would probably go with Enron.

Mr. Landrith, he sent us back a letter, and I believe, let's see if it's in here -- yes, May the 16th in response to our letter of May 11th, where it says

he was currently involved in discussions with Enron regarding the problems which appeared to arise under an existing operating agreement covering Section 34 with respect to drilling proposals that had been made, and he says, until this matter is resolved, which he hoped would be in the next few days, he was not in a position to make a decision on Midland Phoenix's proposal, and it says, "However, I will make every effort to respond as soon as possible prior to the time this comes to hearing before the New Mexico Oil Conservation Division." As of today at the beginning of this hearing we have not heard from Mr. Landrith.

Q Have you called Mr. Landrith?

A We tried to contact Mr. Landrith in the beginning. We called him for six weeks straight and never had any response; left messages with his secretary every morning and he never responded.

Finally, when he did come over he stated that it was not in his -- to his benefit to discuss anything with us and anything said, he would use against us, if he could, and we said, well, you know, we just wanted to try and work something out with him and that's the last communication other than this simple letter that he sent.

The next letter is an offer where it --

Q What date is that letter?

A This is May 17th, after we'd been discussing with Enron there in Midland. It states that Midland Phoenix was the owners of certain leasehold constituting about 51 percent of the east half, and it goes on and states about our proposal, and it says in order to settle this dispute between ourselves and Midland Phoenix, Enron and Midland Phoenix, we would be willing to accept this, and we gave cash consideration; Midland Phoenix would be carried to casing point at which time we would proportionately reduce to our interest in the east half. They could -- Enron could therein go ahead and go for their unorthodox location and we would not oppose that. It just goes on and tells when the hearing -- it says, by this offer to sell, it is the intention of Midland Phoenix Corporation to settle this dispute in a manner that is beneficial to all -- all parties, and that's what we tried to do.

Then on May 17th we received a letter from Midland Phoenix, whereby -- from Enron, I'm sorry, to Midland Phoenix, excuse me -- from Enron Oil & Gas to Midland Phoenix Corporation. They say, this is dated the same day as our letter. Ours was May 17th and this letter is dated May 17th. It says they have reviewed our proposal of May 17th, I guess during that day it didn't take them too long to review it, and they basically said -- turned us down on what we would accept. They declined our offer, and

an illegal location in the east half for a Morrow test in the opinion of Enron not geologically feasible. It says, as you're aware, any Morrow test is a great deal of risk and because of this risk Enron's economics would not justify a carried interest to casing point or pay in excess of $1000 an acre for any leasehold interest we had. They further state that they are very interested in discussing with us either a buy out of our interest or a farmout of our interest under the lands that we own in the east half and it says, of course, any agreement, you know, basically, that we would not -- Midland Phoenix would not oppose them at this hearing of this date.

And that's basically it, other than just kind of a chronology -- chronological communication log wherein a fellow at our office had been talking and us back and forth at dates and with who he had visited with or what employees had talked with, you know, certain -- I can go through those if you wish, or --

Q Who -- who was involved in those conversations?

A It was Bob Landrith, Howard Hodges, Jim Broten, who will testify later, Robert McCommon with Enron, Robert Cannon with Midland Phoenix, myself, Tim Dicey, just primarily all the parties.

Q Tim Dicey's with --

A Midland Phoenix.

Q -- Midland Phoenix.

A He'll be testifying here today.

Q Okay. Is that all you have with regard to Exhibit Number Three?

A Yes, sir, it is.

MR. PADILLA: Mr. Examiner, let me take Exhibit Number Four out of place.

Q And would you identify Exhibit Number Four, please?

A Yes, sir. Exhibit Number Four is a letter for April 14th, 1989, from Enserch Exploration, whereby they state, they make reference to Tim Dicey's letter dated March 22nd wherein we propose the 15,800 foot Morrow test in the east half of Section 34, and it says, please be advised Enserch does not intend to join said well and does not intend to grant farmout of Enserch interest in the captioned land. Further, they intend to contest our unorthodox location, and please let us know if we should have any questions regarding that matter. Signed, John McGee, Senior Landman for Enserch Exploration in Dallas.

Q Let me hand you now what we have marked as Exhibit Three-A, Mr. Duke, and have you identify that.

A Yes, sir, this is a formal broken down AFE of Midland Phoenix Corporation for the drilling of a

15,800 foot Morrow Ranch (sic) at a location 1980 from the south line and 1980 from the east line of Section 34, Township 24 South, Range 34 East, in the Pitchfork Ranch Field, and basically breaks out all costs involved in drilling and completing this well.

Q Who put together the AFE, Mr. --

A The AFE was put together by a gentleman by the name of Phil Stenson, who was previously employed by Enron Oil & Gas and had previously drilled all the wells, being a total of approximately 32 wells, in the Pitchfork Ranch Field, and along with many other wells in southeast New Mexico.

Q Did Steve Wright participate in the -- in putting that AFE together?

A Yes, sir, he did. Steve Wright was -- in conjunction with Phil -- was also a previous employee of Enron. He was very familiar with the Pitchfork Ranch area from the drilling and production standpoint and knows as much about it as anybody.

Q Mr. Duke, to your knowledge and information is this a reasonable -- is the amount -- are the amounts for drilling and completing that well as shown on Exhibit Three-A, reasonable, in your opinion?

A Yes, sir, in my opinion they are. I think probably Mr. Wright would be better qualified to get

into the more technical aspect of the AFE and why certain things are set up and why we have certain contingent costs for certain zones to be -- you know, I think he would be a more -- could answer that, but, yes, in my opinion it is.

Q Have you seen the AFE proposed by Enron?

A Yes, sir. I have.

Q Can you tell us how it -- generally how it differs from your AFE?

A Generally it differs from the standpoint of if they have any problem they don't have any contingency set out in the AFE if there are any problems. There again, I would not be an expert on this, but just generally they would not be able to get down to the Morrow C, which is the main pay at Pitchfork Ranch, if they had over pressured zones in the Atoka and in the Morrow A, and if they had to set liners there, which, if they do have those, then we'd feel that their costs would be pretty comparable to ours, but according to Mr. Stenson, none of these wells drilled out here have come close, within, you know, $300,000. Each well is a different deal, but there again, Mr. Wright would be more qualified to answer the specifics of that.

Q Mr. Duke, do you have a recommendation to the Division as to what the overhead charges should be for a producing and a drilling well, the overhead charges?

A Yes, sir. Yes, sir. What we've done

is taken the average over the last five years and what we've come up with approximately is around $5500 for drilling overhead and approximately $550 for producing.

Q And would Midland Phoenix desire to be named the operator in an order issued by the Division?

A Yes, sir, we would.

MR. PADILLA: Mr. Examiner, I think that's all I have for this witness.

We tender Exhibits One, Two, Three, Three-A and Four.

MR. STOGNER: Are there any objections?

MR. CARR: No objection.

MR. STOGNER: Exhibits One, Two, Three, Three-A and Four will be admitted into evidence at this time.

Mr. Carr, your witness.

CROSS EXAMINATION

BY MR. CARR:

Q Mr. Duke, you're a landman with Midland Phoenix?

A Yes, sir, that's correct.

Q How long have you been in that position?

A Since the beginning of the company.

Q And when was the company formed?

A In November.

Q Of 1988?

A Yes, sir, that is correct.

Q Have you done previous -- you have done previous work as a landman in this area, have you not?

A Yes, sir, I have.

Q Prior to going with Midland Phoenix you were a landman, in fact, with Enron, isn't that correct?

A Enron and HNG Oil Company before that.

Q And HNG became Enron.

A Correct.

Q And while working with HNG and Enron you also did some work in the Pitchfork area, is that correct or is that not correct?

A That is very correct.

Q Can you tell me when the leasehold interest in the northeast quarter of Section 34, the area shaded in yellow on your Exhibit Two, when was that acquired by Midland Phoenix?

A It was acquired, we started acquiring leases in there in February of 1988 -- 1989, excuse me.

Q And the lease you acquired, is it from J. Hiram Moore, Limited? Is that --

A It's split up. The J. Hiram Moore,

Limited, it's a -- that particular part of it, there's three brothers that own a half interest in that 200-acre tract, being the J. Hiram Morre sons, and we've acquired a leasehold from two of the sons and a farmout or agreement to lease to us from J. Hiram Moore, Limited, on the trust of the son who has passed away, or deceased.

Q When Midland Phoenix decides to acquire property interest, how does that come about? Who makes that decision?

A Usually it's a geological decision based upon data or a prospect that has been drawn up by our geologist or geophysicist and they tell us to go out and check to see if the land is available or whatever, and we go out and contact the landowners and start trying to purchase oil and gas leases.

Q In terms of the actual decision to acquire the interest in Section 34, were you involved in the actual decision to attempt to lease that acreage?

A Yes, sir.

Q And when that decision was made, how does it come about? Was there a meeting or --

A Yes, sir, we --

Q -- how you made the decision that we're going to go out and attempt lease interests?

A We get with the geologists who are with

Midland Phoenix and/or geophysicist and determine that this would be a viable prospect and we go out and start leasing it.

Q And was such a meeting held in this case?

A Yes, sir.

Q What sort of land considerations go into -- come into play at the time you're actually deciding to acquire a lease?

Are there land considerations?

Q I'm not sure I understand what you're talking about.

A Does a landman, when you sit down and talk about it, do you have any kind of an input or do you just receive direction from geologist and engineers that there's a prospect?

A We just sit down and talk about it across the table and come up with the best plan based upon everybody's input.

Q At this particular -- in deciding to acquire this particular interest, who were the geologists who were actually involved?

A Stu Martin, Tim Dicey, Howard Hodges and Jim Broten.

Q Is Mr. Martin a geologist?

A Yes, he is.

Q Were there engineers also participating in that meeting?

A No, sir.

Q So it's really just a geological call to begin with.

A Yes, sir, or geophysical.

Q At that meeting do you talk about the risk involved in developing the property or is it -- is that something that comes later?

A Well, I mean, you know, when you're drilling a 15,800 foot well, obviously, there's always going to be risk involved.

Q And was that considered in deciding to go forward with the northeast of 34?

A Yes, sir. Yes, sir.

Q I guess it was decided that was a risk worth taking.

A Yes, sir.

Q In terms of going forward with a decision to lease a piece of property, do you discuss well locations at that time or is that something that comes later?

A You do discuss it at that time, or you can. A lot of times well locations, you know, are deter-

mined later by different mapping techniques or whatever that I'm not an expert on, you know, but --

Q When you decided, or had your meeting to discuss acquiring a lease in 34, did the discussion, did you address the fact that there was a well in that -- on that acreage that was nonproductive?

A Yes, sir, we did discuss that.

Q And --

A That was a viable part of our prospect.

Q And that's something you considered at that time?

A Yes, sir, I think you'll see that in later testimony.

Q No decision was made at that time, I assume, just the (unclear) --

A No, sir, not at that particular time.

Q If we look at your Exhibit Two, the acreage shaded in yellow is the acreage in which Midland Phoenix has an interest, is that correct?

A That is correct.

Q And isn't that also the interest in which J. Hiram Moore, Limited, has an interest?

A That is correct?

A And do you represent any interest owner in this pooling hearing today in any tract other than the

acreage that is included within that yellow outline?

A No, sir, we do not.

Q So you represent no interest in the south half of the southeast of 34?

A South half of the southeast of 34, no, sir, we do not.

Q And nothing in the northwest of the southeast of 34.

A No, sir, we do not.

Q Were you involved in the decision to move the well location from the previously proposed unorthodox location to the standard location?

A Yes, sir, I was. The reason that was, the Page 3 Com No. 2, as you'll note on this particular plat, had encountered an Atoka zone that had some -- some pretty -- a pretty significant show in it.

Our primary prospect in there is Morrow and of course we had to go through the Atoka to get there and so we were trying to reduce our risk, as all operators do, prudent operators. We backed off of the unorthodox location at that particular time because it's not the best location for a Morrow test, and simply because we did not want to -- we did not feel that this particular climate in the oil and gas industry could withstand a penalty imposed by the -- by the OCD here today.

Q And you're talking about a penalty for an unorthodox location.

A Yes, sir, I am. Which would, the way we understood, the way the calculation is, would be approximately, we'd be penalized by 2/3rds of our deliverability.

Q Now, Mr. Duke, will Midland Phoenix call a technical witness that would be probably better for me to discuss the location with, or do you --

A Yes, sir, I would -- I would think so.

Q Now, if I look at your Exhibit Number Three, this is a packet of correspondence. Is it fair to say that you've tried but you've been unable to reach an agreement for the development of this acreage?

A Yes, sir, it is that, and until the 10th, we've just finally reached communication for the development of this acreage.

Q You had had a letter and then a counterproposal back in May from Enron but no real negotiation, is that fair to say?

A No, we -- it is not fair to say. The first we got from Enron was a compulsory pooling from your office, Mr. Carr.

Q And then what -- did you have any correspondence at all with -- from Enron prior to the May 10 hearing?

A Yes. The -- five days before, I believe. We had a letter from them on May 2nd.

Q Have you been able to reach any kind of voluntary agreement for a south half unit in the Morrow?

A No, sir.

Q And would it be fair to say that you tried but no voluntary agreement for a nonstandard in the southeast in the Atoka?

A Restate that, please.

Q Is it fair to say you have no voluntary agreement for a southeast unit in the -- in the southeast quarter unit in the Atoka --

A That is correct.

Q If we look at your Exhibit Three-A, this is an AFE and it appears to me this is not signed. Is this prepared by your Engineering Department?

A Yes, sir, it is.

Q Are these the figures that Midland Phoenix will base a non -- if you prevail, if an order is entered and other operators are asked to pay their share to avoid a penalty, are these the numbers that Midland Phoenix intends to apply?

A To apply, as you're well aware, Mr. Carr, this is strictly an estimated cost is all it is.

Q And this may change?

A No. I'm just saying that these, all these costs, we may not incur all these costs. It's strictly an estimated cost for drilling a 15,900 foot Morrow well.

Q But there's no signature on this exhibit. My question is, is this Midland Phoenix' AFE that they intend to use as they look forward to the pooling?

A Yes, sir. Yes, sir.

Q And if you should prevail and we're non-consent, we'd have to pay our share of these costs as stated on this AFE?

A As they were spent, that is correct.

Q Yes. But we'd have to pay those shares, pay that if the order required it in advance, but these are the numbers. I'm trying to be sure we know these numbers.

A Yes, sir, these are numbers.

Q And have you --

A The estimated numbers, that is correct.

MR. CARR: Okay. I have no further questions.

MR. STOGNER: Thank you, Mr. Carr.

Mr. Kellahin.

MR. KELLAHIN: Thank you, Mr. Examiner.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Duke, let's look at Exhibit Number Three-A. What is the date that this was approved by Midland Phoenix?

A I'm not for sure. It was drawn up about, oh, I would say around the 15th of March. That's when the AFE was run.

Q Has Midland Phoenix drawn up any other AFEs for this particular well?

A No, sir.

Q Either at the orthodox or the current standard proposed location?

A No, sir, we have not.

Q This is it.

A This is it.

Q When we look at Exhibit Number Three --

A Yes, sir.

Q -- and refer to the completed well costs in the first paragraph of the first letter in Three, it's the 1.76 million.

A Yes, sir.

Q Did that number come from Exhibit Number Three-A?

A That's an estimated, as it states in the

letter, that is estimated. We have done some reworking of our pipe. As you'll also note in the letter here, that upon hearing from you we will forward a formal AFE of which this would have been forwarded.

Q Is there a preliminary or a draft AFE that you've utilized to get the 1.76 number that's in this letter?

A Yes, sir, our engineers went through and we went back and reworked some pipe cost and some other contingent factors that we felt we needed to address at that particular point in time.

Q Have you submitted the Exhibit Three-A to any of the various working interest owners that would participate in the well?

A Yes, sir.

Q In what way did you submit this to the various working interest owners?

A As is stated, upon hearing from the different working interest owners as to their decision. we would forward a formal AFE. Enron requested one; we sent it to them. Samedan requested one; we gave it to them. Enserch never requested anything; we did not send one to them. Mr. Landrith never requested anything and we did not send one to him.

Q Okay. Can you give me the dates at

which you sent the AFE to the various parties?

A No. Hold on, let me look here and see. Excuse me, an AFE was sent to Mr. Landrith. I was incorrect. It was sent to all the parties on May the 11th. That is correct. I was confused there.

Q On May 11th of 1989?

A A formal AFE as you are talking about, being Exhibit Three-A here, was sent to all parties.

Q Prior to that you had not sent an AFE to any of the parties?

A No, sir, as was stated in the letter, it was estimated costs only, which is the normal procedure in the oil and gas industry when proposing a well.

Q When we look at your Exhibit Number Two, am I correct in understanding that Midland Phoenix acquired its interest in the area shown in yellow in February of 1989?

A Yes, sir, that is correct.

Q And it results from acquiring two out of the three Morrow interests?

A No, sir, it -- it's more detailed than that. It's several mineral owners in there. Most of the mineral owners in that 200-acre tract are, as is said, it's slang in the oil business, pros and are in the business themselves (sic).

The Moores own the largest interest in there, being half, and we've acquired oil and gas leases from other parties also in there.

Q Oh, I misunderstood you. I thought this --

A No, it's not just -- not just --

Q -- the Moore clan.

A No, sir, it is not.

Q With regards to the J. Hiram Moore, Limited, and that 10 plus percent interest, is that now committed to Midland Phoenix?

A Yes, sir, it is.

Q In what particular way?

A Either that they will, at such time as this hearing is determining a well is to be spud, they will either join or farm out to Midland Phoenix or -- that's correct, join or farm out to Midland Phoenix.

Q Are there specific terms by which they have agreed to farm out their interest in --

A Yes, sir, there are.

Q And is that included in the information shown on Exhibit Three?

A No, sir, it is not.

Q What are the terms of the farmout agreement between Moore and Midland Phoenix on their interest?

A The terms are -- is that they will join with their 10 percent or they will farm out, delivering a 75 percent net revenue interest to Midland Phoenix with the option at payout after all costs are recouped to convert 1/16th of that quarter royalty to a 25 percent back in after payout, working interest after payout.

Q And were those --

A I believe that's -- that 1/16th may not convert, I'm not for sure of that. I'll have to go back to my notes.

Q Did anyone prior to that date propose to your company the formation of the spacing unit for drilling the well?

A No, sir, they did not.

Q To the best of your knowledge is your company the first to propose a well --

A Yes, sir.

Q -- in the east half?

A Yes, sir.

Q When we look at Section 34 on Exhibit Number Two, what is the spacing unit that's assigned to the Pitchfork 34 Com Well in the west half?

A It is the west half 320 acres.

Q As to what formations, do you know?

A As to the Atoka formation where it's

currently producing.

Q As to the Atoka?

A Yes, sir.

Q What is the status --

A It was communitized -- it was communitized to the Morrow and never completed in the Morrow; communitized all the Pennsylvanian and I would have to look at the communitization agreement to see exactly, but I'm sure all the Pennsylvanian was communitized, as well as the Strawn and the Wolfcamp. It is currently producing out of the Atoka.

Q In your opinion is the northwest quarter available for formation of a standard spacing unit for either the Morrow or the Atoka at this point?

A Not for the Atoka. The way the New Mexico -- rules of the State of New Mexico read, that you cannot have two wells producing from the same formation in the same proration unit.

Q Would the Morrow formation in the northwest quarter be available for dedication to the northeast quarter to form a 320?

A Yes, sir.

Q So it's the Atoka that's being produced in the Pitchfork well at this point.

A That's correct.

Q I don't see any of the letters contained in the package of exhibits that are signed by you or sent to you directly, Mr. Duke. What is your involvement with the correspondence? Did you draft any of these letters?

A Yes, I did. Tim Dicey is our president and he handles all the signatory, you know, whatever situation, for the Midland Phoenix Corporation.

Q Have you submitted to J. Hiram Moore a proposed operating agreement?

A No, we have not submitted any operating agreement as of yet.

Q Your March 22nd letter, Mr. Dicey, proposes a Morrow test. At what point did you propose that the Atoka be included as a potential zone?

A You have to go through the Atoka to get to the Morrow, Mr. Kellahin.

Q I understand that's what happens.

A That's right.

Q My question is have you proposed an Atoka completion to any of the working interest owners?

A As you can see by our letter dated March 22nd, 1989, we proposed a 15,800 foot total depth Morrow test of which we will pass through the Atoka on the way down.

Q You would have to infer, then, from the

correspondence that your plan was to include the Atoka in the test?

A As a normally prudent operator, yes, sir, that would be implied, as with any well proposal.

MR. KELLAHIN: I have no further questions. Thank you, Mr. Stogner.

MR. STOGNER: Thank you, Mr. Kellahin. Mr. Padilla, any redirect?

MR. PADILLA: No. redirect.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Duke, when I look at Exhibit Number Two, now this is the breakdown of the percentage of the working interest owners, is that correct?

A Yes, sir, that is correct.

Q With Mr. Landrith owning unleased minerals and that unleased minerals, let me make sure to get this right, where is that unleased minerals at?

A His unleased minerals is in the 200-acre tract, Mr. Examiner, in Section 34, as outlined by -- where Midland Phoenix has its leases he owns an undivided 35 acres net.

Q Just within the yellow --

A Yes, sir.

Q -- boundaries.

A Yes, sir, and we broke it out because, like I said, he has different, varied interest in this east half of Section 34.

Q And how many other parties make up the other 65 percent of the mineral interest?

A Golly, it's broken down, it gets pretty small. Like I said, the Moore clan, as they were stated, they own a half interest in that 200 acres. Mr. Landrith owns 35 unleased minerals. We have a lease from a lady in Seminole, Texas, who owns 30 minerals. You've got Mr. Pearce and Mr. Embry each owning roughly 3-to-6 mineral acres; Mr. Jacobsen, who we have leased owns --

Q Approximately how many?

A Gosh, I would say fifteen.

Q Fifteen?

A Yes, sir.

Q Now these are the mineral interests in just the yellow outline, is that correct?

A That is correct.

Q Okay, now how about the mineral interest in the southeast southeast of Section 34?

A That is owned and subject to an operating agreement by Enron and I guess contractual interest owned by Mr. Landrith and Mr. -- and Enserch and Samedan

and Mr. Jeffcoat, and it's owned by one lady.

Q And who is that?

A I don't have her name handy, sir.

Q How about the west half of the southeast quarter?

A That is a Federal tract that is HBP'ed by the Pitchfork 34 Fed Com No. 1 in the west half of said section. The original lessee or assignee was Samedan and Enserch. They owned it jointly; subsequently farmed out to Mr. Landrith. Mr. Landrith then in turn turned the deal to HNG Oil Company for the drilling of that well.

Q And that well is presently producing from the Atoka formation?

A Yes, sir, that is correct.

Q If I understand your testimony, there has not been an interest -- I'm sorry, an operating agreement signed with anybody at this point?

A That is correct. Until we get all parties either consenting or nonconsenting, we will just wait to -- it would be a standard as was stated in our letter, a 1982 AAPL approved 610, 1982 operating agreement form.

Q Now where did you pull the figures for the overhead charges?

A We just took an average of all the over-

head charges around southeast New Mexico from all different independents and major oil companies and came up with those as competitive in the current industry market today.

Q Now did you actually go out and pull these figures from the companies or are these figures in which you have personal interest in or have interest in through the company of Midland Phoenix?

A No, sir, we did not have interest through the company of Midland Phoenix. These are just through the figures that we area aware by virtue of our past experience in southeast New Mexico; not only myself but geologists and geophysicists and currently what is current market rate, drilling and completing and producing for a well of this particular depth and stature.

MR. STOGNER: Okay, I have no other questions of this witness at this time.

Are there any other questions of Mr. Duke?

He may be excused.

Mr. Padilla?

MR. PADILLA: Mr. Examiner, we'll call Steve Wright at this time.

STEVEN EARL WRIGHT,

being called as a witness and being duly sworn upon his

oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. PADILLA:

Q Mr. Wright, for the record would you please state your full name?

A Steven Earl Wright.

Q Where do you live, Mr. Wright?

A I live in Midland County, Texas.

Q What do you do for a living?

A I'm an independent petroleum engineering consultant.

Q And what is your -- are you consulting in this case to Midland Phoenix?

A That's correct.

Q Have you testified before the Oil Conservation Commission as a petroleum engineer before?

A No, sir.

Q Can you tell us when and where you received your degree in petroleum engineering?

A I graduated from the University of Missouri at Rolla in 1970 with a Bachelor of Science degree in petroleum engineering and you want me to go on with the rest of the experience or do you want to ask me the question?

Q Tell -- tell me about your experience.

A All right. After having served in the army for two years I went to work for Schlumberger Well Services as a logging engineer and between the years 1973 and 1989 I have worked for several different companies, independents and majors. I've acquired experience in reservoir engineering, drilling engineering and production engineering, all aspects of engineering in the Permian Basin area, which encompasses southeastern New Mexico and other areas of the country, as well.

Q Are you generally -- are you familiar with well costs for the -- like the well that is proposed by Midland Phoenix?

A Yes, sir.

MR. PADILLA: Mr. Examiner, we tender Mr. Wright as an expert petroleum engineer.

MR. STOGNER: Are there any objections?

MR. CARR: No objection.

MR. STOGNER: Mr. Wright is so qualified.

Q Mr. Wright, let me hand you what we have introduced as Exhibit Three-A and have you go into detail as to the costs enumerated in that exhibit.

Let's start off with the dry hole costs

and the completion costs, if that will help you.

A Well, all this AFE does is delineate an estimated drilling and completion and total well costs for intangible items and tangible items and I emphasize the fact that it's just an estimate. It's -- it's a best estimate, a best guess; depending on well conditions encountered it can vary significantly, these numbers, up or down.

Q Have you examined the AFE that is -- that Enron is using for their proposed well?

A Yes, sir, I have.

Q And how does that AFE differ with this AFE?

A The total well costs difference is some $299,000.

Q Whose is higher?

A Midland Phoenix Corporation's AFE is higher.

The components of that $299,000 difference, there are minor differences on any number of the individual items. The major differences are Enron's AFE does not include any contingencies and Midland Phoenix' AFE includes some $162,000 worth of contingencies, and the rest of the difference is -- is in the item of the second string of intermediate casing wherein Enron proposes to run 7-inch casing and Midland Phoenix proposes to run 7-5/8ths inch

casing into the Wolfcamp.

Q Why would you use different -- why are you proposing to use different casing for the intermediate string?

A The reason we propose 7-5/8ths is to gain a slight difference in hole size that you can drill out from underneath that string of casing. The reason we feel that's necessary is the 5-1/2 inch liner that would be run underneath that will in all likelihood at some point in time during the producing life of that well be used as a producing liner. It's being run in the well as a drilling liner but at some point in time it's probably going to be a producing liner and if you can -- it's more of a problem to cement that 5-1/2 inch liner in a 6-1/8th inch hole that you can drill through 7 inch than it is -- it's much easier to get a better cement job behind that liner if you would run 7-5/8ths where you can drill a 6-1/2 inch hole.

Q I'm not really certain why -- still why it is that you need to have that -- why are you going to convert that to a producing liner, let me ask that?

A The 5-1/2 is set up to be run through the Atoka zones and/or the upper Morrow sequence of sands, but at least through the Atoka, and that's one of the objective zones in the well. If indeed they encounter an Atoka zone, be it a sand or a bank or whatever.

Q You'll be able to deduce it, is that what you're saying?

A You will then, this is hypothetically, if you deplete the -- make a Morrow completion and ten years from now that's depleted, and then you want to produce the Atoka, well, it will be behind this 5-1/2 inch liner and at that time that liner won't -- it will be a producing liner, it won't be just a drilling liner any more.

It will -- the point I'm trying to make is that if that 5-1/2 is utilized strictly as a drilling liner, it's not as critical an application because you can just squeeze the top of it; everything is isolated; although they not be isolated between themselves, the different zones behind that 5-1/2 inch liner. It's not a problem if it's just a drilling liner but if you want to try to produce one of those different zones behind that 5-1/2 inch liner, then you need to have isolation between them. It's just a prudent thing.

Q Does it allow potentially the recovery of additional hydrocarbons?

A Yes, not that -- not that it wouldn't in the other case, but in the case of running 7-inch, drilling a 6-1/8th hole, then running 5-1/2 and trying to cement that, there is a high degree of probability that there will

be -- it will be necessary to do some remedial cement work behind that liner at the time that you'd want to produce those zones, squeeze, or something, and the incremental dollars will be spent in all likelihood by Enron, except it will be on another AFE. It will be on a workover AFE sometime later in the life of the well.

Q In your opinion which is the better method to use, yours or Enron's?

A It's -- in my opinion it's much better to obtain, or to use all your efforts to obtain a good primary cement job. It's much more cost effective and much more desirable.

Q Even though it costs more initially?

A It may cost more initially but over the economic life of the well it's better.

Q Mr. Wright, do you have anything further concerning the Exhibit Three-A?

A I would like to make a point that if you want to compare Midland Phoenix' AFE to -- to Enron's AFE, they're not -- they're not the same. It's not apples and apples. If you would just make them apples and apples, either add contingencies to Enron's or -- and I don't know why Enron didn't include them because they always have in the past, but if you either take the contingencies out of Midland Phoenix, and if you do that, then the difference in

them is less than 10 percent. So they're very close and both of them very reasonable with those comments about the contingencies.

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

MR. STOGNER: Thank you, Mr. Padilla.

Mr. Carr, your witness.

CROSS EXAMINATION

BY MR. CARR:

Q Mr. Wright, how many wells have you actually been involved with, similar wells, in this area?

A Most, if not all of the Pitchfork Ranch wells.

Q That's about how many?

A 25.

Q Were most of those wells completed as you're recommending here with the -- in the AFE?

A No.

Q Many of them?

A I don't know if any of them are.

Q I assume someone else will testify about the risk involved in drilling a well at this location as opposed to another location on the unit, is that correct?

A Geological risk?

Q Yes.

A I presume someone will.

Q Are you prepared to testify about the risk that should be assessed against owners who don't participate in the well or is that something I'd better pass to the geologist?

A It probably should be addressed by them.

Q You don't have an opinion as to what a proper penalty should be or what that's based on. You haven't studied that?

A No, sir, that's not my area of expertise.

Q Were you involved in picking the particular location for this well and moving it?

A I was involved in some discussions. I wasn't involved in the decision.

Q Are you the proper person to ask whether or not this is the optimum location for drilling a well in the Atoka or is that again a geological question?

A That would be a geological question.

MR. CARR: I have no further questions.

MR. STOGNER: Thank you, Mr. Carr.

Mr. Kellahin, your witness.

MR. KELLAHIN: Thank you, Mr. Examiner.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Wright, I've lost track of your background, sir. Are you a former Enron employee?

A Yes, sir, I am. I was employed by Enron for almost six years as the Division Production Engineer.

Q As a Division Production Engineer were you involved in the drilling of the various Enron Pitchfork wells?

A To one degree or another, yes.

Q Were you involved in the drilling of the Pitchfork well in the west half of 34?

A The west half of 34?

Q Yes, sir.

A Wait a minute, that's the Pitchfork 34. I'd have to look at the date of the -- that the well was drilled.

I went to work for them in July of 1983 and it was right in there is when that well was drilled.

Q I'm just curious about the well in the

other half of the section, which is the Pitchfork 34 Federal Com. Do you have any recollection of being specifically involved in that well?

A Oh, yes. I'm hedging because I don't remember specifically my involvement in the drilling of that well, but from a completion and producing, just prudent involvement from the engineering standpoint of wells that fell under my supervision, I am familiar with that well.

Q The vintage of that well is approximately 1983 completion?

A It was '82 or '83.

Q Were you involved in any more recent Atoka or Morrow wells in this vicinity while you were involved as an employee with Enron?

A Yes, sir.

Q Can you identify on Exhibit Number Two any of the other wells that you were involved in?

A I was involved in at least Nos. 3 and 4 in Section 33; the Moore 34 in the east half of 34.

Q What's the vintage of the Moore 34 in the east half of 34, do you remember?

A It's the summer or fall of '83, as I recall.

Q Do we have any more recent wells?

A Yes, the Warren 3 No. 1; the Page 3-1 and 2 --

Q All right.

A -- are more recent.

Q Not so quick for me, now.

A Okay.

Q Mr. Wright, in Section 3, those two wells that you've just described, what's the vintage of those wells?

A The vintage of 3-2 is a 1987 or '88 well.

Q All right, let's talk about that one.

A Okay.

Q Do you recall in a general way what were the actual costs of drilling and completing that well?

A No, I do not.

Q How about the --

A That's an Atoka well.

Q I understand.

A Okay.

Q The Warren 3 Well in the south half of 3, do you remember the actual cost of drilling and completing that well?

A No, sir, I'm not -- I'm probably not going to remember the -- the actual well costs on any of

those wells.

Q Okay, are you the individual that prepared Exhibit Three-A?

A I did not prepare it. It was prepared by Phil Stenson and we had discussions concerning that AFE.

Q Where is Mr. Stenson? Is he still employed?

A He's in Midland.

Q Is he still employed with Midland Phoenix?

A He's not employed by Midland Phoenix. He's a --

Q A consultant?

A -- consultant.

Q He's a drilling engineer that prepares AFEs?

A Yes, sir.

Q And he's the fellow that actually did this work?

A He's the fellow that actually filled in those numbers.

Q You've reviewed this AFE and based upon your experience you think it's reasonable?

A Yes, sir.

Q How come the AFE has a check mark beside

development as opposed to wildcat?

A I do not know.

Q You don't know?

A No.

Q Is this a development location?

A That -- that's a geological question.

Q When we look at the entry, about the third one down here, on the intangibles, this 1003, the footage rate, that's one; the next one, the 004 is a day rate?

A Yes, sir.

Q This AFE is day rate proposal?

A This is a day work estimate, yes, sir.

Q Who's -- who's to be the drilling contractor, do you know?

A No, sir.

Q What bids did Midland Phoenix receive from any contractors for drilling the well?

A I can't testify to that. I have no knowledge.

Q How does the day work quotes compare to the footage cost estimate for drilling the well?

A I don't know that you could get a footage bid.

Q Did you attempt to get one or do you

know if Mr. Stevenson attempted to get one?

A No, just based on my experience.

Q When we look at the contingencies, they appear on two points in the AFE. One is at 1023. There are contingencies there for intangibles, drilling and completion.

A Yes, sir.

Q Can you give me a general idea of what type of intangibles we're speaking of for the drilling portion of those costs?

A The contingencies are just 10 percent.

Q Take the total intangibles and add 10 percent.

A $71,650, again it's -- maybe it's just rounded off, but $71,650. If you will subtract that from that 788,150, you will get roughly $716,500 and 10 percent of that, then, is 71,650 and that's how it's --

Q All right, sir, and is that true of the completion portion of the contingencies for the intangible?

A Yes, sir.

Q It's simply a 10 percent?

A Just 10 percent, and the same for the tangible items.

Q All right. When we look at -- all right, the tangible, now, these refer to also a 10 percent?

A Yes, sir.

Q What type of stimulation program is planned for the well, Mr. Wright?

A It will require an acid job, I would think.

Q That's typical of how the wells in this area are stimulated for either Morrow or Atoka production?

A Yes, sir.

Q And that's where the $20,000 entry is intended to do?

A Yes, sir.

Q Have you attempted to try to compile a separate AFE the Atoka versus the Morrow?

A No, I have not.

Q Can you estimate for us based upon your experience what are the incremental additional total costs for taking a well to the Morrow?

A I can and will estimate that for you. Let me interject.

Q You may qualify your answer in any way.

A This -- this well at this location could conceivably be one of the most difficult wells ever drilled out there if all of the prospective zones which you'll see the maps, et cetera, later on, if those -- if the prospective -- all of the prospective zones are encountered at

this location , this well is going to be very, very difficult to drill and get drilled to 15,800 feet.

Q Why?

A Because you have over-pressured and depleted or partially depleted zones overlying and underlying one another, necessitating more and more liners and pretty soon you're down so small that you can't drill any more.

Q You don't propose to dually complete or commingle production.

A No.

Q You'll produce, I assume, starting with the lowest formation back up the hole. I guess that's the conventional way of testing and producing of a deep gas well?

A That is the conventional, you might say that. It would depend, to me it would depend on the logs and what is actually encountered in the well.

Q I understand. This well is to be drilled through the Morrow at a total depth and then based upon log analysis you may or may not perforate the Morrow, take a drill stem test and see what that's like.

A That's correct.

Q If it's commercial you'd produce the Morrow and then back on up the hole? All right, sir, as-

sume that --

A Now, I think that -- that -- to get back to your original question. the incremental cost is probably half a million dollars and I hope you'll take that --

Q Let me see if I understand.

A Okay.

Q If we've got a total well to TD, completed well, 1.7 plus million --

A Yes.

Q -- I would take half a million off of that and that would get me through the Atoka?

A It could.

Q All right. Are you familiar with how COPAS attempts to allocate and charge costs of wells to various zones?

A No, sir.

Q If my client should elect to participate with you and only as to the Atoka formation as a primary objective and wants to go nonconsent as to the deeper Morrow formation, is it fair to say that based upon your estimate that's a difference of about half a million dollars in total well costs?

A I don't know that that net difference would be agreeable to either party. That would be -- in my opinion that would be a point to negotiate.

Q Has that ever been discussed up to this point as best you know?

A Not with me, it hasn't.

MR. KELLAHIN: Thank you, Mr. Examiner.

MR. STOGNER: Thank you, Mr. Kellahin.

Mr. Padilla, any redirect?

MR. PADILLA: No questions, Mr. Examiner.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Wright.

A Yes, sir.

Q It seems like you've had one advantage over me when you were comparing these two AFE's and I have not seen the other one as of yet.

When I do see the other one, what are some of the major differences? Now you did mention the intermediate pipe or the second intermediate string, the 7-5/8ths.

A Right.

Q The 7-5/8ths versus the 7-inch only.

A And how about the day work cost? That's

another large item.

A Well, the -- the day work rate on Enron's AFE is estimated at $200 a day less than it is on the Midland Phoenix AFE, but the number of days on the Enron AFE is greater than the number of days on the Midland Phoenix AFE and the total day work cost is some $47,000 greater on the Enron AFE than it is on the Midland Phoenix AFE.

Q What are cementing costs? Is there much of a difference between this and --

A Cementing and (unclear) for drilling and completion on the Enron AFE is estimated to be 66,000 and the Midland Phoenix AFE is estimated to be 55,000.

Q As I understand it, Mr. Wright, you did not prepare this AFE or had any interjections into it?

A Well, Mr. Stenson and I discussed the various aspects of drilling this well and I don't want to try to act like I'm not answering your question. I didn't write down any of the numbers and I didn't determine any of the numbers. Mr. Stenson and I discussed how to go about trying to get this well drilled; what's -- what hole sizes we need; what casing parameters we need, et cetera.

Q But in your work with Midland Phoenix you have, obviously, looked over these figures --

A Yes.

Q -- have you not?

A Yes, sir.

Q Do you agree with these figures as far as, when I say "agree with them", the actual cost of this particular item, whether you're agreeing with particular chemical or whatever the item might be?

A The costs are reasonable, yes, sir.

Q Okay. In your work with Enron did you prepared AFE's?

A Yes, sir.

Q And before that you prepared AFE's with the companies which you worked for?

A Yes, sir.

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

Are there any other questions of Mr. Wright?

MR. KELLAHIN: Mr. Examiner, may I follow up on your questions?

MR. STOGNER: Mr. Kellahin.

RECROSS EXAMINATION

BY MR. KELLAHIN:

Q I'm a little confused now, Mr. Wright. There's no question that you concur in the drilling and

completion program for the well.

A That's correct.

Q All the things that are utilized in the well are things that you've examined and decided about hole size and all the rest of that.

A Right.

Q Did Mr. Stenson price out the items that went into the AFE or did you do that?

A No, Mr. Stenson did that.

MR. KELLAHIN: No further questions.

MR. STOGNER: Thank you, Mr. Kellahin.

Any other questions of this witness?

He may be excused for now.

Mr. Padilla.

MR. PADILLA: Mr. Examiner, we'll call Tim Dicey at this time.

TIM R. DICEY,

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

DIRECT EXAMINATION

BY MR. PADILLA:

Q Mr. Dicey, would you please state your full name?

A Timothy Rich Dicey.

Q Where do you live, Mr. Dicey?

A In Midland, Texas.

Q What is your connection with Midland Phoenix Corporation?

A I'm President of said corporation.

Q Have you testified before the Oil Conservation Division as an expert before?

A No, sir.

Q Tell us, sir, where you were educated.

A I got my undergraduate degree at San Andrews University, San Andrews in Scotland.

I then got a Masters degree at New Mexico State University at Las Cruces.

Between when I graduated with my undergraduate degree and when I came to New Mexico I worked in England, Africa and the Middle East, acquiring seismic data and interpreting seismic data for all sorts of various majors, particularly Shell.

After I left Las Cruces I came to Midland, worked with Gulf Oil Corporation, starting as an exploration geophysicist.

And then I've worked with HNG, subsequently to become Enron Oil & Gas, starting as a geophysicist and ending up as acting exploration manager.

I've worked with Midland Phoenix Corporation as President since November, when the corporation was first put together.

Q What are your degrees in, Mr. Dicey?

A They're both titled in physics. My graduate degree, although titled in physics, was essentially geophysics, half being geophysics and half being geology. At the time the Geophysics Department was very -- rather limited and came under the auspices of the Physics Department and so although the title of the degree is physics, it's essentially geology geophysics.

Q As exploration manager, what are the -- did you -- that was for Enron you were exploration manager?

A That's correct.

Q What were your duties as exploration manager?

A To essentially come up with drillable oil and gas prospects.

Q Mr. --

A In the Midland Division and Midcontinent Division.

Q Mr. Dicey, have you supervised the pre-

paration of certain geologic exhibits for introduction here that you will testify from today?

A Absolutely.

MR. PADILLA: Mr. Examiner, we tender Mr. Dicey as an exploration specialist in petroleum geology.

MR. STOGNER: Are there any objections?

MR. CARR: No objection.

MR. STOGNER: Mr. Dicey is so qualified.

Q Mr. Dicey, let's start out with Exhibits Five and Six. Do you want to hang them up?

A It probably would be best if I could hang them up.

MR. STOGNER: We'll take about a five minute recess.

(Thereupon a recess was taken.)

Q Mr. Dicey, let me refer you now to Exhibits Five and Six and have you tell us what those are.

A Well, the Pitchfork Ranch Field area has numerous, or several, prolific pay zones and --

Q What -- what are these exhibits, Mr.

Dicey?

A All right, I was going to do a lead into that.

The objective of these two cross sections, two cross sections held stratigraphically on a particular geological marker, to show the producing pay zones and some of the potential zones that are not yet producing or potentialed in the area.

To start with we have a primary producing interval in the Pitchfork Ranch area which has been called the Morrow C Sand.

Q Is that identified on that cross section?

A Yes, it's identified as C Sand Series.

Q And that's at the bottom of the cross section.

A That is the bottom of the cross section. There is one deeper zone, the B Sand, but these wells didn't go deep enough to encounter it, although that is the case and there's really no record of what happens to the B Sand, we're intending to test it, anyway. It's only 200 foot deeper and it's worth testing. To the north it produces prolifically up at the Antelope Ridge/Bell Lake area, and to the southwest, where Enron drilled their Brininstool 21, it's currently producing very well. So we feel it's

worth going 200 feet, but I can't show it on this cross section because these wells didn't go to it.

Q Now you're showing -- you're talking from Exhibit Number Five, is that correct.

Q I'm essentially talking from both when I am talking generally. I'll come back and describe each one perhaps in more detail. This cross section is an east/west cross section. You can see where the proration unit we're asking for in here with our proposed location. These are the wells that the cross section encounters on here going from west to east.

In this instance --

Q Referring to Exhibit Number Six?

A Right.

Q Okay.

A It's a north/south cross section starting from this well to the north and going through these wells moving south, again essentially going through our proposed location.

So essentially I'm trying to relate all the pay zones, potential pay zones, and general stratigraphy in the Pennsylvanian section in the area with what we're proposing to do.

As I said, the first pay zone, the most prolific pay zone in the area is the Morrow C Sand and you

can see you've got good development in the C Sand in this area.

The next pay zone is going to be -- or potential pay -- is the B Sand, or what's been called the B Sand, but there are no producers in this area and we'll essentially just note that the thing is there.

The Sinatra Series, as marked in here on both cross sections. we feel that we have a potential for encountering a Sinatra sand. Of course I'll describe this again when we come back to the maps, each in turn. There's a series of maps showing each of the potential pay zones that we're looking at in here. The Sinatra Series is another potential prolific pay zone which has been encountered to the south here and we feel it extends to the north through the east half of the Section 34.

The Warren Sand is very similar to the Sinatra series, same sort of deal. We feel it's going essentially north/south. We feel again east half is best for potentially developing that.

The A Sand series has had some very significant shows across the field and we feel as though it's a very highly potential objective and it's one of our primary objectives, the A sand and the B sand being the two primary Morrow objectives in our location.

Further up the hole we come through

another series of what we've termed the Atoka series. The Atoka Sand is a thin sand we see marked in yellow here. We see again it's extensive across the area, although thin. It's very prolific. I'm not sure what Enron's EUR is for that sand but it's like on the order to 30 feet here for that thin sand throughout the field. We feel like it's another objective. It's a secondary objective. We feel that the sand has essentially been depleted by the extensive drilling program that Enron has done to develop that sand, and so it's a secondary objective.

One of the wells that went to develop that sand is the Page 3 Com No. 2, which is drilled just to the south of Section 34 and Section 3. That encountered a new zone, an Atoka bank zone, which you see on this well right here. It has for all intents and purposes virgin Atoka pressure and separates from the Atoka sand which was by that time so very much depleted.

MR. STOGNER: And what well are you referring to?

A This is the Enron Page 3 Com No. 2.

MR. STOGNER: Okay.

A And so we feel it's a potential although it's as yet unproven pay zone in the area. We have only one well that's essentially found it, although, as you can see, throughout this whole series in here there are a

series of porosity zones in these same sections and moving to the north up to Antelope Ridge, which is highly productive in the Atoka Bank, you have these things coming and going and I think that's exactly what's happening here. You've got a series of zones in here coming and going and this happens to be one which we lucked into.

Q Mr. Dicey --

A Yes, sir.

Q -- generally what you have shown on these two exhibits colored in yellow is the Morrow and the blue is the Atoka, is that correct?

A Not wholly correct. What I'm showing in yellow are sand zones and what I'm showing in blue are carbonate zones. In particular, the two blues, they're both limestones. I'm not implying dolomite or anything in this. I'm just trying to bring out that we're in a bank series in here as opposed to deep marine type limestone deposition as in the light blue. I'm just showing this light blue in terms of correlation purposes across the cross section.

Q Do you have anything further with regard to these two cross sections, Mr. Dicey?

A Not that I can think of at the moment.

Q Okay, why don't you take your seat again and we'll go through these other geologic presentation.

A All right.

Q Let's go on now to what we have marked as Exhibit Number Seven and have you identify that, please.

A Let me talk about Exhibits Number Seven and Eight together.

Q That's all right.

A Is it all right for them to be together? Exhibit Number Seven is --

Q What are they, first of all?

A They're both maps made in the Morrow series.

Exhibit Seven is a gross map, meaning a general sand thickness map, in the Morrow C Sand, which I pointed out. There is a prolific pay zone in the Pitchfork Ranch Field. Superimposed on that and what that is colored in in bright oranges and reds a net map which is taken from the gross map with a porosity cutoff of in this instance 6 percent. The idea implying the more potentially productive or productive areas within that gross sand. The contour interval in this instance is 5 foot on both maps. You can see in here the area to the west of Section 34 is the primary area of production in the Pitchfork Ranch.

Q Now you're referring to Exhibit Seven when you're talking.

A I'm referring to Exhibit Seven here. To

the east in Section 34 you can see that the east half has essentially almost a separated unit in terms of net porosity from the main part of the field.

Exhibit Eight is a structure map giving an idea of structure on that sand. It's not a structure map on the sand per se itself because it's difficult to pick where the top is. You have a series of lines of sands coming in here and going out and where we've picked it is what we've called the top of the Middle Morrow shale, which is this unit right in here.

MR. STOGNER: And what depth is that?

A Oh, goodness, about 15 -- it depends where you are but about 15,000, 15,100, something like that.

MR. STOGNER: And you're referring to Exhibit Number Five at this point.

A This is -- yeah, what I'm talking -- that's right.

On Exhibit Number Seven you'll see that the wells as colored in, fully in red are the Morrow producers out of this pay zone.

The ones in halves -- half colored red, are ones that either had attempted completions and produced something, or had shows in them.

Q Now tell us about the well in the northeast quarter of Section 34. Is that -- are you going to tell us about that later or can you tell us about that now?

A That well? I can tell you something about it. Mr. Broten, who will testify after me, will go into more detail about the shows encountered when drilling from information, his mud log information, et cetera, but in general speaking the well originally was intended, I think it was like the fifth well drilled in the field. It was originally intended as an Atoka well, for the Atoka Sand, that is, and when the -- when it didn't come in with a high pressure gas that all the other sands or the other -- the only other well that's producing is the Pitchfork 34, but when it didn't come to see us when drilling it, and didn't have a very marked sand section, it was decided that it was dry in the Atoka Sand, it didn't have the Atoka Sand, and it was drilled on to the Morrow with a skinny hole, with 4-3/4 inch bit.

And, proceeding to its TD below the C Sand it encountered good section in various of the Morrow sands, including the C, which I'll elucidate in a minute.

Q In terms of -- in terms of the Morrow, can you tell us -- this Exhibit Number Seven shows deep orange in the middle of the east half, essentially all of the east half.

A That's correct.

Q How do you arrive at that conclusion?

A Well, if you look at the numbers next to each of the wells, to each of the deep wells, that is, and you see the top number is the gross figure and the bottom number is the net figure. The net figure is what's gone into making this map, of course, and you can see in there by well control that in the Moore 34 you have 41 feet net. In the Pitchfork 34 you have 32 feet net, and you come back up into the Madera 33 No. 2 and it's got 41 foot. So you have a distinct low in there.

You go to the north and you go to the (unclear) Ridge 37, it has 35 feet, and again back up to 42 at the BTA HBP Madera.

Going to the south you have in the Page 3 No. 1, it has a questionable 19 feet and it's questionable because the only log we could get in the -- I say "we" -- I mean Enron could get in that well was a cased hole neutron log and so we had to make some qualified guess as to what the net pay was in that well, but essentially it was -- it was pretty tight.

Q When you say "we" and you qualify that with Enron, is that when you were working with Enron?

A That's when I was working with Enron, that's correct.

Q How many of those wells did you work on when you were working with Enron?

A I probably had input in the vast majority of them. I worked extensively in both geology and geophysics, geophysical aspects of the development of the field. The field was discovered about the year I -- year before I started with HNG.

Q And when was that?

A In '82. It was discovered in the Madera 32 Fed Com No. 1.

Q And the Madera 32 is where?

A Right there.

Q Where is that? What section?

A Section 32. It's that north half proration unit.

Q Mr. Dicey, how are the proration units laid down or how are they configured in that Pitchfork Field?

A There is a mixture of laydown and standup proration units on a 320 spacing, of course. Older wells have been drilled at legal locations to date. There have been no plans up to now to drill any unorthodox locations.

Q Are there any nonstandard locations in that Pitchfork Field at this time?

A Not that I know of.

Q Atoka?

A The Atoka wells? No, essentially they are standard, also, although there are some twins to some of the Morrow wells.

Q Now, once -- once a pattern has been established, say, for a west half proration unit such as the west half of Section 34, has that pattern changed for Atoka and Morrow formations?

A No, there have been no overlapping Morrow and Atoka proration units to date. There have always been the same proration unit. It's been a standup in the Morrow; then it's been a standup in the Atoka.

Q Okay.

A Let's go on -- what -- what does Exhibit Number Eight contain?

A Exhibit Number Eight is, as I said, it's a structure map, essentially showing structure on the C Sand. This, of course, is a stratigraphic field; structure has relatively little to do with it because we really know of no water line, as it were, or gas/water interface, although some wells have produced water. Normally the Pitchfork 34 --

Q Now you're referring to the Pitchfork 34, that's a well in the southwest quarter of Section 34,

is that correct?

A That's correct.

Q Okay.

A And that well was drilled again through the Morrow C Sand and is completed in the Atoka Sand section.

When it hit the Atoka Sand section it was mudded up to 40, 40-1/2 pound mud, if my memory is correct, and drilled all the way to TD with that heavy mud.

However, we had good shows in both the A Sand and the Morrow C Sand. Coming back to complete in the Morrow C Sand, it's on the cross section up there, I believe it flowed something like 1- point -- well, let me look at it, rather than rely on my memory. Here it is, okay, it flowed .16 to .24 million a day and 25 barrels of water per hour.

The second set of perfs -- those perfs were then shut off and we went upstairs to the next set, again still in the C Sand, had an acid job and flowed 300 -- 300,000 a day and 7 barrels of water per hour and flowed, indeed, up to 20 barrels of water per hour, and again from my memory, back when I worked at Enron, it flowed something like 1000 barrels of water over load from that -- from that sand, showing we were actually getting water production from the formation.

Q In terms of the proposed proration unit, what can you tell us, what's your summary insofar as the Morrow?

A The summary insofar as the C is concerned is that I feel that at least down the west half we have a problem in terms of net porosity in the C Sand and I think we'll regain a thicker net sand in the -- throughout the east half.

The Pitchfork 34 is showing water production for one reason or another and so we want to keep away from that.

The Moore 34 had a very good show in the Morrow and Mr. Broten will testify later as to what shows we had in it and how -- what happened to it when it was -- attempted a completion. It showed no water production whatsoever and we feel confident that a well 1320 feet south of it is going to be a good producer of the C Sand, and essentially produce the reserves out of the east half of the 34, not leaving anything remaining in the north half, northeast quarter thereof.

Q And a well at that location in your opinion is going to drain the entire proration unit.

A I think so. I think generally speaking work that Enron did showed that drainage was on 320 acres, plus or minus. It might have been more in some

cases and less in others, but essentially speaking 320 was a good number for it, and I feel that the location we have here will do a real good job of draining everything in the east half of 34.

Q Do you feel the entire east half of Section 34 is reasonably productive in the Morrow C Zone?

A I, yes, I do.

Q And would a proration unit -- well, let me ask, is the east half proration unit the optimum type of proration unit to drain that east half?

A Yes, I think so.

Q Let's go on now to Exhibit Number Nine, is that --

A Yeah, good number. This is the Sinatra Sand. Let me come back here.

Q And what is -- what is that map, Mr. Dicey?

A Oh, I do beg your pardon. This map is a net sand map kind of similar to what we saw before. In this instance has a porosity cutoff of 6 percent, indicating sands which have potential production.

We show here a series of channels moving north/south around the edge of the field. To the south you can see the wells colored red are wells that have production from the Sinatra series per se. I don't think I

have any show wells in this instance, so I won't mention that.

We feel the trend is north/south. It's essentially -- we have a chance of production from another one of these sand bars to the north here. It's not our main objective, It's something I think, you know, if we had to find it, you know, it's not our main objective.

These are the sands we're looking at in here, this series, you --

MR. STOGNER: You're referring to Exhibit Number Five at this point, are you not?

A Correct, and I'll refer to Exhibit Number Six, also. You can see in here the sands. This well is the most prolific. This is the HNG Page 3 Com No. 1 and I can't remember the exact production but it's produced something like 8 or 9 BCF and it's going like stink. It is an excellent well.

Q So essentially you just hope that in terms of encountering the Sinatra Sand that you will -- you will encounter the Sinatra Sand.

A If we hit a Sinatra Sand with some goodies in it, we'll be delighted but we don't, certainly don't count on it. We think the risk is relatively high, being fairly far to the north. We had a snick of it, a little bit of it, in the HNG Moore 34, indicating that

there may well be another sand build-up to the east of that, but that's all I can say about it.

Q Now you're going to be testing all these sands on the way down, is that --

A We, well, we won't DST the sands; we've found that DST'ing the Morrow sands have -- is a good way of damaging them; just pure experience in the past. Generally speaking, where we have sands, where it has a good show, you know, going back and production testing it is the way to evaluate them. And, of course, if we had gone and we set pipe in the C Sand, for instance, and I'm sure that we will make a C Sand producer there, it's a question of when that depletes we'll go back upstairs and test each sand on the way and evaluate its merits, you know, at such time.

Q Okay. Do you have anything further on Exhibit Number Nine?

A Nothing that strikes me offhand.

Q Okay. Let's go to Number Ten, Mr. Dicey, and --

A Okay, Exhibit Ten --

Q -- what is that?

A It's a net sand isopach again of the Morrow Warren Sand. It's a net map, in this instance made with a porosity cutoff of 8 percent. It's very similar in

nature to what -- to the Sinatra section. It goes north-south. Again on Exhibits Five and Six you can pick out the units in there. Get out on Exhibit Five -- no, I take it back. On Exhibit Six there is an excellent sand. This was first encountered in the HNG Warren 3 No. 1, and it's sitting behind pipe currently. It is an untested zone in terms of production, at least at this side of the Pitch-fork Ranch. It's something I'm sure Enron will come back up hole; they're currently producing out of -- they've per-forated in the C Sand and they'll probably come back up-stairs and evaluate on the way out of the hole.

Again we feel that because of the den-sity of wells drilled in the area with little success in re-finding that sand, although we feel there's a chance of finding it up here, we don't, you know, it's not our major objective. It's not a secondary objective. We'll evaluate it at such time as we come across it.

Q Anything further on Number Ten, Mr. Dicey?

A No, sir.

Q Let's go on to Exhibit Number Eleven and have you tell us what that is.

A Okay. Exhibit Number Eleven is a map showing the lower A Sand Section. We have a gross map which is essentially just a thickness map on the lower A

Sands and on top of that, colored in the greens and grays and yellows is a net thickness map with porosity greater than 8 percent, again, hopefully, showing areas of great potential production.

Again you see on here, well, in this instance the only wells we have here are show wells in the A sands and they are colored, half colored (unclear and red.

On the map, on both cross sections up there in Exhibits Five and Six, you can see where the A Sand is split into two units on Exhibit Five, in Pitchfork 34 No. 1 we had two distinct units, and essentially one distinct unit in the HNG Moore 34 No. 1, a unit which looks very, very similar to the Warren sands behind pipe in the HNG Warren 3 No. 1.

And I'm referring to Exhibit Six in that instance. We feel these sands are channelized or bar type sands around the edge of the field. We feel they're going essentially, oh, northwest to southeast across Section 34. Both wells drilled in Section 34, the Pitchfork 34 and the Moore 34, as I've shown up there, encountered good A sand. They encountered good shows in the sand and again I refer to Mr. Broten's testimony in terms of the type of shows and what happened to them when we tried to complete. I mean when Enron tried to complete in them.

We feel we have an excellent chance. In fact our -- the standard location here is going to best evaluate or has the best shot at a very thick A Sand Section. This is one of our primary objectives.

Q And this is still in the Morrow, is that --

A This is still in the Morrow. This is Morrow A.

Q Okay.

A When we -- when we first -- when Enron first drilled these wells, or I'll say HNG first drilled these wells, the sand were just labeled, A, B, C and D, in terms of which ones were gotten or were reached first. Unfortunately we had one or two extra surprises, like the Sinatra and like the Warren. It's so hard to have the history in itself in terms of how it was named because the geologist was sitting on the well at the time, Mr. Broten, in fact, came to see him in the middle of the night and so it's called Stranger in the Night and that's why we call it Sinatra.

The Warren, of course, is just a -- is a fee name and there are various other sands in there which we've had to re-inject.

Q Let's go on now to Exhibit Number Twelve, if that's all you have on Number --

A By all means.

Q Okay.

A Number Twelve and Number Thirteen refer to the Atoka section.

Q And what are they?

A Oh, pardon. I'm just wanting to keep getting up, see. Exhibit Twelve is a net sand isopach for the Atoka Sand with a porosity greater than 8 percent again, showing where best production is. It shows you're increasing in thickness from gray zone through the red zones or pink zones. We have in there wells produced from or that are producers in the Atoka Sand colored solid red, and a half red for a sand -- for ones which had shows in.

We feel that the Atoka Sand -- let me come back to the two cross sections again to describe where this is. We're looking here at this thin sand which is pretty well extensive across the area on Exhibit Five now and again on Exhibit Six you can see through here.

I think you can see on Exhibit Twelve we have a very thick section, or relatively thick section compared to the other wells in the field at the location crossing at least three-quarters of the east half of Section 34. We had a 3-foot sand in the Moore 34 giving the indication that we had a build-up to the southeast there. The nearest two producers, of course the Pitchfork 34 in

the west half, and the Page 3 Com No. 2 in the north half of 3.

I think it should be noted right here that the Pitchfork 34 Com No. 1 is in a standup 320 on the west half but indeed by the maps that we have here, it would appear that it's draining only a southeast -- southwest quarter; that the northwest quarter, indeed, essentially unproductive.

We have reason to believe that currently Enron is producing this well at essentially an unratable flow and indeed because --

Q Which well are you talking about?

A We're talking about the Pitchfork 34 Com No. 1, the west half of 34. Let me back up one instance there. The second well to be completed in the -- in the Atoka Sand was the Diamond 5 Fed Com No 3, and was noted when --

Q And where is that well?

A That's in the north half of Section 5, 25, 34, and that well showed significant pressure drawdown from the production of the Pitchfork 34, so we knew that over that two -- nearly two miles we had significant communication and drainage, and in fact it was considered when I was at Enron that the Pitchfork 34 would indeed have drained the whole reservoir if it had been given the

chance.

However, embarked upon a drilling program to drill it up on a 320 spacing, twinning the Morrow wells wherever necessary -- wherever we had a good sand, and in fact the last well to have done that was the Page 3 Com No. 2 in the north half of Section 3.

Going back to my early remark as I understand it, the Pitchfork 34 is being produced in unratable flow and we feel that quite a lot of the reserves that were in the east half are being produced out of this well in the west half, and of course, we're not too impressed with that, being lessees in the east half.

MR. CARR: Mr. Chairman, could I get a copy of Exhibit Twelve? I don't have that in my material.

A Oh, you should have. I put one in there.

MR. CARR: All right, thank you. Since those aren't color coded, it's hard sometimes to --

A Yeah, I apologize. Being our drafting department if relatively limited and with a pencil it's a bit more difficult, or time, I should say, time consuming.

Q Mr. Dicey, let me ask you, on that exhibit this -- as the sands are laying and shown in that

Exhibit Number Twelve, does that show that all 320-acre proration units completed in the Atoka are all productive in the Atoka? In other words, all full 320 acres have -- are productive?

A No, not generally. I think you can see by the way these thicks and thins go that you have areas which are thicker maybe -- well, for instance, let's look at the west half of Section 33. We have that twin well there, the Madera 33 Fed Com No. 3, and as you can see by the map here, you have an area which is spewing in from the northwest right through the center of the section which had little or no sand, and so essentially that well is going to be draining the southwest quarter and indeed into Section 32 and west of there.

Q So if you went strictly on productive acreage, most of those proration units probably couldn't qualify for a full 320-acre spacing, is that --

A Yes, I would say that's probably true in a general sense but then you come back to the fact that we saw a significant depletion when drilling the Diamond 5 Fed Com No. 3 from the Pitchfork 34. So you're draining a very large area with one well, or potentially draining a large area. It's because of the geology, the way it's been laid down, that you have these sand units coming and going out of each section and so it's, you know, it's difficult to

put an arbitrary matrix of production units, which is what our proration units are, on top of that.

Q In terms of a nonstandard proration unit of 160 acres, as proposed by Enron, how -- how does this exhibit affect that proposal?

A Frankly, as I said, 320 is probably is too small a proration unit for it. Again I refer back to the drawdown between those two wells two miles separated. You could essentially have drained the whole field by use -- by that Pitchfork 34 No. 1, and so essentially the proration unit perhaps should have been 7 square miles.

But in this instance it's been drilled up on 320's. That's been the standard as far as drilling up in the Morrow. It's been the standard as drilling up in the Atoka, both here and everywhere else in southeast New Mexico. I don't believe there's any other gas -- Atoka gas production which is on anything else but -- or anything less than a 320, and I don't see any reason why it should be changed here.

I didn't mention Exhibit Number Thirteen. I apologize.

This is a structure map based on what we've called the base of the Atoka (unclear) marker on Exhibits Five and Six. It's where I've hung these two cross sections to give you an idea of the structural -- how the

structure lies in terms of how these wells sit and everything. It's again in terms of evaluating the Atoka on a structural basis.

That's all I can think of.

Q What does Exhibit Number Thirteen show?

A It just shows the general structural picture across the Pitchfork Ranch as far as the Atoka section is concerned.

Q Does that show that the Atoka may be present in all of the east half of Section 34?

A It gives a structural picture of the Atoka section. What's going to be present in Section 34 is going -- is dependent on particular stratigraphy within the Atoka unit. All it's giving is a structural picture of that.

Q Okay.

A Generally used if you had a problem with water legs and such like in a particular well and we've only seen one that I ever recollect and that was -- I'll make a bold guess, I believe it was in the Sun well, Sun Pitchfork Federal in Section 11, 25, 33. I believe that tested water out of the Atoka Sand. Of course you can see that it way down dip from anything we're looking at in Section 34.

Q Okay. Is that all you have on Exhibits

Twelve and Thirteen?

A That's all I can think of straight off.

Q Okay. Let's go to Number --

A That's all of it.

Q Does that conclude your --

A That concludes everything I brought --

Q -- your geologic presentation?

A That is correct.

Q Mr. Dicey, do you have a recommendation as to what kind of penalty should be assessed against non-consenting working interest owners in a compulsory pooling order?

A Generally speaking, in southeast New Mexico it's a 200 percent penalty on top of the cost for drilling the -- and completing the well and I would recommend the same here.

Q Why? Why is that?

A Why change from conformity? It's the same as -- it's served to be reasonable anywhere else. I see no reason for changing that.

Q Is this a substantial risk in drilling -- is there a substantial risk in drilling a well to the Pitchfork Morrow?

A There is a risk in drilling any well and even though we have multiple pay zones and multiple poten-

tial, there is substantial risk in, of course, being able to realize those potential reserves out of any of those formations and that's essentially what that -- what that penalty is saying is that if we're going to take a risk and carry somebody down to that formation until the thing is producing, then we should have something extra on top of the -- on top of putting the money into the ground to getting there.

Q Would approval of your application be in the best interest of conservation of oil and gas in your opinion?

A Yes, I believe so, particularly if you go back in all of the maps that I've shown, you can see that generally, and particularly Exhibit Seven, I think it was, yeah, Exhibit Seven, which is really our primary objective, being the lowest prolific potential pay zone, we see that there is potential significant reserves in the northeast quarter, which we feel we will realize with our standard location, which an unorthodox location will probably not touch.

Q Okay. How about in terms of protecting correlative rights? Would you application have the effect of protecting correlative rights?

A Absolutely.

Q Tell us how it would.

A We have leased, of course, the northeast quarter and the northeast of the southeast and the people who have mineral interest, own the minerals under the northeast quarter will be protected by us drilling and completing a well at a standard location for a standup proration unit in the east half, whereas any other unit, for instance a south half or a southeast quarter 160 would not because they would not be included in that proration unit for that production.

Q Mr. Dicey, do you have anything further to add to your testimony?

A Not that I can think of offhand.

MR. PADILLA: We'll pass the witness at this time, and we'll offer Exhibits Five through, I believe, Exhibit Thirteen.

MR. STOGNER: Are there any objections?

MR. CARR: Objection. I may have an objection. I'd like to ask a couple of questions concerning the exhibits.

MR. STOGNER: Which particular exhibit or just --

MR. CARR: Well, actually, Mr. Stogner, Exhibits Seven, Nine, Ten, Eleven, Twelve and Thirteen.

A Exhibit Nine, what was wrong with Eight?

MR. CARR: Well, it had your name on it.

If I could, Mr. Stogner?

MR. STOGNER: Mr. Carr.

VOIR DIRE EXAMINATION

BY MR. CARR:

Q Mr. Dicey, who prepared these exhibits? I'm talking now about Seven, --

A Oh, oh, the exhibits?

Q -- Nine, Ten, yes.

A Okay, these maps were all drawn by our geologist, Mr. Howard Hodges, who is not present, he is in Midland currently, Mr. Jim Broten, and myself.

Q All right. Now they bear the name of Mr. Hodges, is that correct?

A That is correct.

Q Is Mr. Hodges the person who actually drafted and prepared this exhibit?

A I drafted it, he drew it, and I had input into it.

Q And can you testify as to the accuracy of this --

A Oh, absolutely.

Q -- individual exhibit? Is Mr. Hodges a geologist?

A Yes.

Q Have your worked with him in the past?

A Yes, sir, for six years, since I started with HNG on January 1st, 1983.

Q Does he have experience in this area?

A Yes, sir. I believe he has something in the order of 30 years experience in -- in petroleum geology.

Q Do these reflect his interpretations as well as yours?

A That's correct, sir.

Q In working with -- do you supervise him now?

A Yes, sir.

Q And do you trust his judgment in putting this together or have you independently checked each of these points?

A I haven't independently checked each of these points. I trust him to evaluate what he's looking at. My input is in terms of how it is mapped, the kind of model we're using, and just general discussion with any problems he might have, but I fully trust him in terms of his geological capability.

Q And is it your believe that this is an accurate interpretation of the reservoir based on his study?

A Absolutely.

Q And you know him to do accurate work?

A Yes, sir.

Q He wouldn't construct this for the purpose of the hearing differently than he otherwise would.

A Actually, to be totally honest with you, these maps were not -- well, these particular maps were constructed for hearing, obviously, from the drafting point of view, but they were taken from -- the actual contouring and interpretation were taken from larger maps we've prepared for other -- other objectives.

Q In constructing these maps do you know whether -- well control data was used, was it not?

A Yes, sir.

Q Was seismic information also relied on?

A No, sir.

MR. CARR: I have no objections.

MR. STOGNER: Exhibits -- let's see --

A Seven through Thirteen. Oh, Five through Thirteen.

MR. STOGNER: Five through Thirteen will be admitted into evidence at this time.

Mr. Carr, your witness.

CROSS EXAMINATION

BY MR. CARR:

Q All right, you're the president of Midland Phoenix, is that correct?

A Yes, sir.

Q And you have studied the area, both while with Enron and since that time.

A That is correct.

Q And in coming up with drillable prospects it was your job with Enron to evaluate reservoirs, isn't that correct?

A Not from an engineering point of view, which I'll point out here, of course. I was looking at it initially, primarily in terms of geophysics. The field itself was discovered using seismic data, and that's, of course, the primary background from which I was coming.

I personally like to do my own geology, to see what I'm looking at seismic-wise (sic) and so I started doing more and more geology in this area to identify with this geophysics.

Q Did I misunderstand you? I thought you

said your duties with Enron included coming up with drillable prospects?

A Yes, sir.

Q And that was just from a geological or geophysical point of view.

A From potentially both.

Q Okay. And in that role you prepared structure maps and isopach maps and did basically what you've done here, isn't that correct?

A Good gracious, all sorts of different things.

Q Same things you've done here?

A Yes.

Q And you worked with Mr. Hodges at that time?

A Yes, sir.

Q Did Mr. Broten also work with you at that time?

A Yes, sir.

Q Did you supervise them? What was your relationship?

A Mr. Broten and Mr. Hodges were geologists. Mr. Hodges was the Division Geologist for HNG. Mr. Broten was Senior Petroleum Geologist. I at the time was either District or Division Geophysicist, and we worked

together as a team to produce the different wells, you know, that were drilled for development of this field or for stepping out, or whatever.

Q I believe you stated you came to work for Enron shortly after the field was discovered.

A That's correct, January 1st, '83.

Q Were you involved in the drilling of the Pitchfork 34 No. 1 Well?

A 34 No. 1? No, sir, I was not. That was done before I really got into the geology of it. I was evaluating the seismic data in the area at the time, and although it's a well I used in that interpretation, I had very little input into the actual drilling of that. I think it was like the fourth well drilled, something like that.

Q Did you ever have any disagreement with the efforts made by Enron to complete that well as a producer?

A I certainly didn't at the time, no. You see, bear in mind that I think Mr. Wright testified, this is a relatively difficult area. It's becoming more difficult as time goes on because of depletion effects, et cetera, because if varying pressure zones as you drill down.

What we've done through here has been,

we've had a considerable learning curve in terms of how we drill it, how you complete it, and what needs to go into a successful, most efficient drilling and completion of a particular well, and, you know, what we did at the beginning, we may not do right now, and you know, that's reflected in the way we put our AFE together and what we're looking at in terms of casing design; how we're looking to try and protect each of the potential pay zones on the way down instead of just hitting them all with heavy mud if we have a problem, and maybe losing drilling fluid into the formation, damaging them, and maybe then not being able to produce them later. You know, this is a learning process.

Q All right. Now, I believe you testified when you were discussing the cross sections that you intend, if you're successful in drilling this well, to take it on down to the --

A D Sand.

Q -- D Sand. And I believe you also stated that that had not been penetrated in -- in other wells in the area?

A Not quite -- well, in this immediate area, I don't believe so.

Q Wasn't it in fact penetrated in the Pitchfork 34 No. 1?

A If it was, I am not aware of that.

Q You stated the Brininstool something well, or something like that.

A Yeah, the Enron Brininstool 21 Fed Com No. 1.

Q It was productive from this zone?

A That's correct. It's in Section 21 of 25, 33. It's not on these maps, of course. It's way to the southwest.

Q Do you know when that well was drilled?

A Let's see, '87, I suppose, and completed in -- either completed in late '87 or early '88.

Q Have you reviewed the overall performance of the well?

A I was keeping in touch with it up until I left Enron, which was in August of -- end of August last year, and just from hearsay from thence on, but from what I understand it was producing at somewhere around 2-million cubic feet of gas a day.

Q And do you know what --

A That was stabilized production.

Q Do you have an opinion as to whether or not it's ever even going to pay the drilling costs?

A I, from what information I had, it looked -- I would have said it would, yes.

If it doesn't, I can promise you the

Wolfcamp upstairs behind pipe in that well will.

To expand on that question, I wouldn't drill this well purely for a D Sand. If it was going to be like 500 or 1000 feet below our primary objective, I wouldn't think of doing it, but being 200 feet, I feel it's just worth the extra 2 or 3 days of drilling to go down and have a look at it.

Q Okay, I'd like to ask you some questions about your exhibits and you'll have to help me a little bit with these --

A Fine.

Q -- because I'm not complaining about them not being color coded, but I have to ask you a couple of questions about it.

A You're welcome to look at these ones.

Q Yes, I've looked at your exhibits. If we look at Number Seven --

A All right.

Q -- around the orange areas you have a gray band.

A That's correct.

Q Is that gray band the area where you are (unclear) portions of the reservoir? Could you tell me what is shaded in gray?

A I'll move over here so I can show you.

Again I apologize for not having multiple colored versions but --

Q Is this a thinner section, I guess that's --

A All right, what you're seeing, the gray is -- has a minimum net thickness of I believe 20 feet and it increases up to a maximum of like 70 plus feet in the pink area, so essentially orange, you know, when you get into the orange it's getting better and when you get into red it's better still.

Q And as I look at your maps, you had this gray border on most of them. Is that generally what that indicated, a --

A Yes, sir, it's what I really wouldn't -- if it was less than that I'm really, you know, it's not that good.

Q So it would be less than 20 feet generally, with what you've shaded there.

A Well, no, not -- I'm sorry, not less than 20 feet would be gray. It depends on the contour interval on the map. What I'm trying to show with that gray is that's -- that's the first thickness that I think should be potentially productive. Anything thinner than that, i.e. out to the white areas, is not so good. Now it doesn't mean to say it couldn't be good, it's just prob-

ability wise it will not be.

Q If the reservoir was all shaded gray that probably wouldn't indicate a very good section in the reservoir, would it?

A Hypothetically, yes.

Q All right. Yes it would be or it would not?

A Yes, I'm agreeing with you.

Q Now the Pitchfork 34 No. 1 Well was drilled relatively early in the life of this reservoir, isn't that correct?

A That is correct.

Q And you've had that -- when was that? Do you know?

A Oh, you ask me. It must have been '83.

Q And you've had that information as you've gone forward and made subsequent interpretations.

A That's true.

Q Would you look at Exhibit -- your Exhibit Number Nine.

A Yes.

Q Now your Exhibit Number Nine, if I understand it, is the net isopach on the Morrow Sinatra Sand, isn't that correct?

Q Yes, sir.

Q That's a 6 percent porosity cutoff.

A That's correct.

Q It's a 5-foot contour interval.

A That's correct and in this instance you're looking outside the gray zone here, to further your point earlier, you're looking at less than 2 foot -- sorry, less than 5 foot of sand.

Q All right, and then you have the gray area --

A Two grays, between 5 and 10, 10 to 15. Then you go into the orange. In this instance I'm wanting to show more of a depositional (unclear) seeing channels coming from the north, the stuff being deposited by channels coming from the north and you see these things meandering around -- meandering around these things here. This one out to the west, there's probably a cutoff that went down under this one. This fellow is another subsequent channel superimposed on that, and, of course, because you're mapping the sand as one unit, you're seeing the two superimposed on each other. So it kind of looks like a mishmash but you're regarding it as two separate channel systems.

Q What you've got here is an interpretation of the Morrow Sinatra Sands based on well control data, is that correct?

A Yes, sir.

Q Now, you didn't use seismic in making this interpretation.

A I made a brief hesitation there. It was not used in this interpretation. I can -- going back again to when I was working with HNG, Enron, for one reason or another we had to the opportunity of drilling in the south half of Section 3. It was a very short time fuse in terms of ability to get on that lease, in terms of the lease running out. I evaluated two seismic lines in that area, two Getty lines, trade lines, which we subsequently purchased. I looked at them. I saw something I liked on them, came back, recommended we drill it. We spudded the well, I picked up the lines later, interpreted them, et cetera.

And subsequent to that, of course, I was responsible for recording a whole bunch of seismic data in here; the primary, a line that goes north/south through here.

Q Through where?

A Excuse me?

Q Through where?

A Through the west half of Section 34, through the two wells, the two Page 3 Com No. 1 and No. 2, south through the -- what is now the Meridian Penn Number

whatever the devil, No. 1; another one that goes east/west in Section 3; another one that goes northwest/southeast, something like that. What I'm coming to is the fact that I've interpreted all that data, integrate it to what we knew with the well log data, and what we found was that over in this area in here we had a very bright response on the seismic confirming what we saw in the -- by drilling the Warren 3 No. 1 and indeed, subsequently the Page 3 No. 1.

Q When were those drilled?

A '85 or '86.

Q And have you received any -- or reviewed any additional seismic information since that time on this particular area?

A Oh, yeah, up until the time I left. I was -- it was a continuing process.

Q Are there new lines?

A Yes, sir.

Q And what's the most recent seismic line that you have through this area?

A Probably 8513 -- no, 8513 was that northeast/southwest line. '85 or '86, I can say that. I'm not sure I didn't shoot one in '86.

Q All right, but there's been no new seismic in terms of seismic lines being run since that time.

A Not to the best of my knowledge.

Q And when were -- have there been any wells drilled in this area in the last, say, two years, since the first of 1988?

A Well, chronologically the Warren 3 was the first one in Section 3; then the Page 3 No. 1.

Q And when were they drilled?

A Like I said, '85 or '86, I can't remember exactly. I'd have to go back and look.

Then the Chapparal 10 No. 1 in Section 10, 25, 34.

Most recently this -- I guess this is the most recent well, this Meridian Pitchfork 10 No. 1, which is completed in the Sinatra Sand.

Q In Section 10?

A That's correct.

Q And when was that drilled?

A This year, or it was completed this year, and it's flowing under a million a day and gobs of water.

Q Okay, any well, any information from that well would -- would any information from that well, being the Meridian Well in the north half of 10, affect your interpretation in the east half of 34?

A No, sir, it in fact confirms our picture

of how these channels set.

Q All right. Now I'd like to hand you what has been marked as Enron -- and I guess this is Enron Exhibit Number Twenty.

A All right.

Q This is Enron Exhibit Number Twenty.

A Uh-huh.

MR. CARR: I have some other copies, Mr. Stogner.

Q Mr. Dicey, this is entitled Morrow Sinatra Series Sand, is that correct?

A Yes, sir.

Q Now that 's the same map that we have as your Exhibit Nine, the Morrow Sinatra Sand, isn't that correct?

A Yes.

Q And this was prepared by -- it's got some initials, JRB and TRD. Is TRD you?

A That's correct. JRB is Jim Broten. TRD is Tim Dicey and --

Q And then it was revised in February of '88 by Mr. Hodges, is that correct?

A That's correct.

Q A 6 percent porosity cutoff was used in this exhibit, isn't that correct?

A That's correct.

Q And 5 foot contour intervals.

A Yes.

Q Now, if we look at your Exhibit Number Nine, you have indicated that there is substantial reservoir under the northeast quarter of Section 34, isn't that correct?

A Yes, sir.

Q Now based on this interpretation that was made by -- finally by Mr. Hodges, that's the same Mr. Hodges that prepared Exhibit Nine, isn't that correct?

A Yes, sir.

Q There was virtually no reservoir in the Sinatra Sand present under the northeast quarter of Section 34, isn't that right?

A That's true.

Q And, in fact, what you've got is an area between the zero and 5 foot contours, about all that you have clipping the southeast of the northeast corner of Section 34, isn't that right?

A That's true.

Q If we were shading this Exhibit Number 21 using your curve we'd have to shade all of that acreage that is under the Midland Phoenix interest in 34 as gray, would we not?

A That's true.

Q All right. Now, I'd like to take you, and incidentally, if I understood your prior testimony, there have been no new wells that would affect your interpretation since 2-19-88. Isn't that what you testified?

A That's what I just said but let me come back on that a little bit.

Q Now, I'd like to go on, Mr. Dicey, and if Mr. Padilla and you want to come back, I'd like you to do that later.

A Okay.

Q Now I'd like to hand you -- ask you re refer to what has been marked as your Exhibit Number Twelve.

A Uh-huh.

MR. CARR: And, Mr. Stogner, I only have one copy of an exhibit. (Unclear) I can provide additional ones following the hearing.

Q But I'd like you to take a look at what I have marked as Enron Exhibit Number Twenty-one, Mr. Dicey --

A Yes.

Q -- and if we look at this exhibit, down in the legend this is, I believe, a base Atoka Carbonate Structure Map, isn't that right?

A What you've got here, and let me talk about it --

Q All right.

A -- is one I put together with Mr. Hodges and Mr. Broten yonks ago. This is kind of a mishmash. It was originally put together in 1986, as indeed was the previous (unclear) exhibit you showed me. Because of needs, crisis needs, usually, these were updated in a hurry.

We'd be looking at one particular small area and update the map in that small area and not really updating the whole map in that area.

As I said before, development of the Pitchfork Ranch or the whole area has been a question of a learning curve, wherever we can get new information. Quite often we've changed -- not changes our model but modified the model which we're looking at. And these two maps both were revisions by Mr. Hodges and I can't remember the specific instance in question but they were both for very local areas and really don't reflect an update on the whole map.

Q All right.

A Since these were drawn originally, our idea on this one hasn't changed a whole bunch with the exception of what we're seeing in the east half here, and

when I've gone back and made these two cross sections here, I found, much to my surprise, that what we used to correlate as what used to be called the top of the Atoka carbonate, wasn't in fact correct in the Moore 34, and how it got by, I'm not sure. I made a whole bunch of cross sections here and I don't think I ever included that well. And when I included the well I found that what we're looking at in that well was not correct and we essentially missed a cycle. Let me elaborate further with this Exhibit Five.

You can see in here that you've got several carbonate zones in here and these other ones coming and going above it and what we're calling top of the carbonate, the top of the Atoka carbonate in here, was going from one to the other of these zones, and what we thought originally was where the sand should fit, was under here and in fact, if we come back and recorrelate this including this well properly, with them, we're going -- correlating up as the thing's being deposited, we have found now that the top of the Atoka carbonate corresponds in here.

Well, you know, an arbitrary name was given. It's not top of the Atoka carbonate because the top of the Atoka is here and this is the first carbonate, but it's just a name we gave it. But that's the marker we were using.

This is an extra unit in here. In fact if you want to extend it further you could say it's part of another bank system, like this business up here, because as you look at the system it comes and goes, again with these two lime units above it, you've got these things coming and going and they're real easy to, you know, when you take logs out of context it's real easy to mix and correlate them and that's what we've done, and we hadn't recognized the fact that we had a small snick of sand in this well and indeed Mr. Broten will testify in a minute, we saw that on the mud log somewhat delayed because of a bit trip, but it was actually in that well. We have a snick of sand in it, so this map here, although it has 1988 as the most recent revision on it, it doesn't reflect a revision of the whole map, it's only in a small area, and I think it was for this business down here, with these newer wells down here, but I really am not going to say one way or the other.

Q All right, this map does bear your name.

A Yes, sir.

Q It was revised in January, '88.

A That's true.

Q It does -- it is of the net Atoka Sand and that is what is also mapped in your Exhibit Number Twelve.

A That's true.

Q And for the purposes of the hearing or at least for developing the prospect, in April of this year you revised the map.

A That's true.

Q And you revised it, and the revision addresses your newly acquired acreage in the northeast quarter of 34.

A Yes, sir.

Q And it attributes producable reserves to that tract, does it not?

A That's true.

Q And they were not attributed or apparent in the prior interpretation.

A That's true. Let me --

MR. CARR: That's all I have.

A -- go back, you're bringing that date in there, the 10th of April, that is the date I redrafted that.

Q All right.

A It is not the date when the map actually was drawn.

Q But it was drawn after --

A It was drawn between November of '88 and whenever, April --

Q And for the purpose of this prospect.

A No, sir. The -- when the original map that that was taken from was for another objective, and in fact, was a map covering a similar area to this one.

What I've done for all these maps is taken -- what I've done for all these -- or what we've done for all these different horizons, for the whole of the Pitchfork Ranch Field, we have a map for them, and all I've done is draftingwise restricted that area and taken that area and put it on this map.

Heck, I don't see why I should show the whole field.

Q Since you left Enron, the -- your interpretation or the interpretation of this particular section in the Atoka --

A Yes.

Q -- has changed, if you look at the map that was prepared that bears your name (not clearly understood) --

A Like I said, it's from a learning from what happened.

Let me go further before you fold this up.

To show you again how our learning has changed, we can see two seismic lines -- oh, I was wrong, it's 13, I'll be darned -- anyway, this old group shoot

line and this is one of the proprietary lines I was referring to, shot by -- it's unrecorded, purely for the sole use of the company shooting it. You can see, I've put on here the Atoka, what I considered (unclear) anomaly in the Atoka, hopefully showing where the production will be in the Atoka. We've got some others sitting over here (unclear) put on here. We could never really tie it up exactly with what was going on in here. However, since the discovery of the bank well in the Page 3 No. 2, which is right there, I feel that what we're seeing on those lines reflects that bank section. It fits much better in terms of resolution, the date you're looking at. It's much better to be able to see 40 foot of net porosity in the limestone than the 3 or 6 foot sand. Okay.

So again we're seeing maybe the extent of that bank zone, but, of course, you know, I could have shown a map with this thing and I didn't because the only well that has that net zone in it (unclear) is this well and where do you go from it? I don't know. We've got seismic in here because I don't have access to it, not with Midland Phoenix. I remembered where it went to and that's about all I can tell you. I think it's obviously going to extend at least over the south half of this thing, if not a lot further.

Q You're talking about the Page No. 3 Com

No. 2 Well --

A That's correct.

Q -- when you say "this well" in the north half of Section 3?

A Section 3.

Q That was drilled prior to the time this map, obviously, was developed, isn't that correct?

A It was put on later because Page 3 No. 2 was drilled in '88 --

Q Well, obviously you had a log on this well, did you not?

A Yes.

Q And the seismic lines were in existence. were they not?

A That's correct.

Q And you were -- you had the information available to you at this time this map was prepared, the same information which you had when Exhibit Twelve was prepared, isn't that right?

A That's correct.

Q All right, now --

A But that's what I'm saying, these seismic anomalies were from a previous map; the well was not.

Q Now you testified that you thought a

200 percent risk penalty would be appropriate.

A I believe so. I misinterpreted what you said. Yes, I believe it would be correct.

Q If a south half unit were approved for the Morrow and a nonstandard 160 unit in the Atoka comprised of the southeast quarter, do you thin a 200 percent penalty would also be appropriate?

A I feel that geological risks involve din drilling any well are going to be very similar regardless of whatever proration unit is allocated to that well, so I would say at least in terms of geologic risk that goes into that, yes.

MR. CARR: May it please the Examiner, I would move the admission of Enron Exhibits Twenty and Twenty-one.

MR. STOGNER: Any objection?

MR. PADILLA: No objection.

MR. STOGNER: Mr. Carr, will any of your witnesses be going through these exhibits?

MR. CARR: I don't believe so, Mr. Stogner. They're from Enron's files and Mr. Dicey has indicated that he has worked with them and he has, I think, qualified them.

MR. STOGNER: Mr. Carr, I'm going to ask that one of your witnesses at least go over

them because the way it's going to appear on the transcript it would be --

A Heck, I'll go over them, if you like. I did them.

MR. CARR: Let me ask Mr. Dicey.

Q Mr. Dicey, did you prepare what has been marked Exhibits Twenty and Twenty-one?

A If I didn't prepare them I had considerable input into them.

Q Were they, while with Enron, your best interpretation of the reservoir?

A For the time and at the time, yes.

MR. CARR: I would move the admission of Exhibits Twenty and Twenty-one.

MR. STOGNER: I don't have any problem about Midland's evidence, Mr. Carr. I do have a problem that we have a bunch of colors here and I don't know what they are.

I would like a description, at least somebody who can go over them.

MR. CARR: Well, may I have Exhibit Twenty-one, and I'll ask Mr. Dicey what the colors indicate.

A All right.

Q All right, Mr. Dicey, Exhibit Twenty-one.

A Exhibit Twenty-one, this is a structure map on what was considered to be, in fact, actually this well --

MR. STOGNER: What well are you talking about?

A The HNG Moore 34 No. 1, the structure point on that map will not be correct because of what we have learned since we originally drew this map, but it's a structure map overlain by a net sand map of the Atoka Sand with a porosity greater than 8 percent.

The red areas show -- or increasing red areas show increasing thickness of net sand in the Atoka.

Q What is the blue line?

A The blue line was an arbitrary line put at -- to follow a structure contour because in the -- where am I -- okay, in the Chapparal 10 No. 1 we felt that -- Enron felt at the time that they encountered formation water and so we just took it, okay, at that structural level, then everything lower than that was going to be wet, but it really isn't meaning a whole bunch because you've got different loads in this thing and, let me see, some of these more modern -- more recent wells in Section 9 and 10, -- it doesn't matter, okay go ahead.

Q What does the yellow shading indicate?

A The yellow shading indicates Enron's or HNG's acreage position before infill.

Q And what do the green lines show?

A The green lines are seismic anomalies which I attribute to the Atoka section.

Q And the green dots?

A The green dots are the Atoka Sand producers.

Q And the orange dots?

A Are Morrow producers. It should be noted -- well, okay -- go ahead.

MR. CARR: Do you have anything further on that one, Mr. Stogner, you'd like us to establish for the record?

MR. STOGNER: I'll accept it.

MR. CARR: All right.

Q And I'd like to also, Mr. Dicey, if I could ask you if you would look at what has been marked as Enron Exhibit Number Twenty. Can you tell me what the green lines are? Are those the seismic lines?

A That's I was referring to earlier when I said that we drilled that Warren 3, I mean HNG drilled that Warren 3 No. 1 on seismic and subsequently to that we shot various lines. These were two trade lines, NM13743

and IAPA 2, or whatever it is, those were the two lines in use for that.

We then shot -- well, we picked up -- they are group shoots, PGI 14 and who knows what else in here and we've shot various other data more recently to that.

Interpreted all that data with the subsurface information and we'd come up with at the time, what we felt definition of this bar. Then we felt it was a north/south traveling bar in Section 3 and Section whatever it is, 10, to the south of it.

We have no seismic data in the east half of Section 34. In fact, we've only got one in Section 35 and we saw something in that section, too, and so we drew -- we molded our channel map to fit that one seismic data, but in fact, you know, what we had in the Morrow 34 is essentially a 2-foot piece of sand we felt was just as much opportunity for it being in the third -- in Section 34 as in Section 35.

Q And Section 34 is outlined in orange?

A That's correct.

MR. CARR: Mr. Stogner, I again move the admission of Exhibits Twenty and Twenty-one.

MR. STOGNER: Exhibits Twenty and Twenty-one will be admitted into evidence.

MR. CARR: And I will provide additional copies.

MR. STOGNER: Thank you, Mr. Carr.

Any additional cross?

MR. CARR: I have no further questions, Mr. Stogner.

MR. STOGNER: Mr. Kellahin.

MR. KELLAHIN; Thank you, Mr. Stogner.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Dicey, on your Exhibit Number Six, which is the B-B' cross section, stratigraphic cross section, you have projected for us the proposed location on that display between the Page 3 Com 2 Well and the Moore 34 No. 1 Well, as shown there.

A That's correct.

Q All right. Can you project for us approximately where we would find the proposed location if we look on Exhibit Number Five, which is the A-A' cross section?

A Yes, sir. As you can see on the map on the bottom here of Exhibit Five, you can see the cross sec-

tion where it goes to each of these wells going in an east/west fashion, so essentially to project that well straight on to the cross section it's going to be around where the Moore 34 sits.

Q When we look at the Moore 34 Well, will you rank for me in terms of the sands that have the greatest potential for production at your proposed location, starting with the sand that you think has the greatest or most optimum potential at your location?

A All right, yes, I'll have no hesitation to. I feel to begin with, because of the prolific production elsewhere in Pitchfork Ranch, because of the shows we had, I mean Enron shows or HNG shows they had when drilling through the Moore Well, again, as Mr. Broten will testify in a minute, I feel the Morrow C Sand is number one in that rating, and, of course, is our primary objective.

The second would be the Morrow A Sand, or Lower Morrow A in this instance.

After that everything else essentially is secondary objective, being Sinatra, Warren, Atoka Sand, and I guess maybe somewhere between -- well, okay, let's rephrase that.

Number One --

Q Wait a minute, you need to do it for the record. Slow down, now.

A Yeah, I'm aware of that. Number One for the Morrow C.

Number Two for the Morrow A.

Number Three for the Atoka Bank.

Number Four for the Sinatra.

Number Five for the Morrow Warren.

Number Six for the whatchamacallit, Atoka Sand.

Q In looking through the various geologic displays, Mr. Dicey, I think I have found isopachs for all those potential formations that would produce at this location with the exception of the Atoka Bank.

A Yes, sir.

Q And in response to Mr. Carr's question it was your explanation that one could not prepare -- be prepared because the only log or the only well that showed that potential was the well in the north half of 3, which is the Page 3 Com No. 2.

A That is correct.

Q Did I hear you correctly?

A Yes, that's correct. Let me elaborate a little further on that.

You can see from Exhibit Five, has both the Pitchfork 34 No. 1 and the Moore 34 in it, showing the Bank section, or equivalent Bank sections, that had the net

porosity in the Page 3 No. 1. You can see the Pitchfork 34 has a very thick section, in fact it's a thicker section than the Page 3 No. 2. You have little snicks of that Bank, that remnant in the Moore 34, and of course, when you go south into Section 3, that's where you have the actual thinner sections from the 34 but you have the net porosity in it.

Let me also emphasize there, this is one unit, one potential bank unit out of a series of bank units.

Again, at Antelope Ridge just to the north you have at least three different Atoka Bank units, all productive at different places and they come and go within essentially one spacing. They're very erratic but very prolific when you hit them.

We see indications of potential porosity in the HNG Page 3 No. 1; a little bit up hole from the unit, as seen in the Page 3 No. 2; and the Page 3 No. 2 there's a little unit just a little bit deeper than that, which also -- both units could build up in something like this thick net unit elsewhere, and, you know, you have good well control in the area, or reasonably good well control, but like I say, you go from this well to this well and you've got a soupy unit.

Q We need to explain for the record "this"

well to "this" well. You're looking at the wells in the north half of 3 --

A Right, Page 3 No. 1 to the Page 3 No. 2, they're a distance of like 1320 foot away. You've gone from no section to a thick, porous section.

Q Let me have you sit down. So it would have been possible to prepare an isopach using this net Atoka Bank that we found in certain of the wells in 33 farther to the west, as well as the pitchfork 34 and as well as the Page 3 Com No. 2, but we lack, apparently, sufficient control as we move to the north and to the east to give you a good handle on the extent of -- of that bank.

A That's partially correct.

Q Okay.

A You could make a gross map, i.e. off the unit itself, but a net porosity map -- and you don't know where that goes from there. Like you just said, it could go anywhere to the northeast, we have no control over it. In fact, as a bank unit, it's probably deposited around structure and if you go back to -- where are we -- Exhibit Thirteen, the Atoka structure map on the face of the Atoka Carbonate, and look at the way the structural picture looks in there, it could well go around that nose, as seen in Section 34 and Section 35.

We just don't know. We haven't got the

control. The field hasn't been developed that far east to say that. All we do know is we have one well in the north half of Section 3, which by luck had a real nice porous zone in one of the Bank zones.

Q To what -- let me ask you this, to what extent does your decision on the specific well location in the east half of 34 depend upon the expectation of obtaining the Atoka Bank production?

A The original location, (unclear) location, which was our original proposal, of course, as Mr. Duke testified earlier, we have to go through this zone to reach the Morrow. We know there are risks involved in drilling any well and certainly to the Morrow is no exception, we feel that the closer we could get to the Page 3 No. 2 the more likely we are to hit that net zone. We have no ability, though, to map it, because, like I say, it's only one well that's got that real thick net zone in it, so it's a question of playing closeology as far as that secondary objective.

Q Okay, without working with a map, then, I want you to try to explain to me in the southeast quarter of 34 --

A Uh-huh.

Q -- when we look at each of the four 40-acre tracts, which of those four 40-acre tracts has the

least risky, greatest potential for Atoka Bank production?

A Oh, absolutely the southwest quarter of the southeast. There's no question about that.

Q In terms --

A And that's just purely playing close-ology, because you've only got the one well to go from. But there's no reason for -- you know, we could go up and (unclear) to the southwest of the northeast and find another super development from one of the other banks within that series that wasn't overly present in the Moore Well, it was developed to the east, and that's what I -- the kind of a thing I'd expect.

Q In terms of trying to rank, then, the various 40-acre tracts in the southeast quarter of 34 --

A Yes, sir.

Q -- for the Atoka Bank, the southwest of the southeast is number one?

A Number one.

Q Rank the other three 40's for me.

A Northwest would be 2, as would possibly the southeast. Number three would be the northeast.

Like I said earlier, --

Q Well, we're going to get through this a lot quicker, Mr. --

A Oh, I'm sorry.

Q -- Dicey, if you just respond directly t my question.

A All right.

Q When we look at --

A Well, I don't want you to miss anything.

Q I'm sure I won't. When we look at Exhibit Number Twelve, Mr. Dicey, now we have a net sand isopach on the Atoka.

A Uh-huh.

Q Would you take that and rank for me in order of priority using number one, the best of the 40-acre tracts in the southeast quarter of 34 for that sand?

A Southwest, northeast is one and two and then northwest and southeast is number three, just going by this map, which I think is quite reasonable.

Q All right, sir. When we look at Exhibit Number Nine, which is your Morrow Sinatra Sand --

A Uh-huh.

Q -- would you do the same in terms of ranking the 40-acre tracts in the southeast quarter of 34 for that --

A Okay, northwest would be number one. By this map the northeast would be number two; southwest, number three; southeast number four.

Q If you'll take map number 10, Exhibit

Ten, which is your Morrow Warren Sand, would you rank those four 40-acre tracts for me, please?

A Southeast, one; northeast, two; southwest, three --

Q Excuse me, we've lost the examiner, I'm sorry.

MR. STOGNER; No, we're on Ten, right?

MR. KELLAHIN: Exhibit Number Ten.

A Northwest, four. Well, no, I take that back. I'm sorry, let me start that again.

Southeast, one; northeast, two; and southwest and northwest, three.

Q Without regard to the potential of a location penalty factor that the Division might adopt on the unorthodox location, separating that from your consideration and taking all the various potentials for a well in the southeast quarter, your best location was the location you first requested, which was the location in the southwest of the southeast?

A The main -- the reason for choosing that location was purely on closeology for the Bank.

Q For the Atoka Bank.

A For the Bank, and it's really just in

terms of, you know, we have to get investors to put money into this, it was just minimizing our risk --

Q Well, I didn't ask you the reasons, now, I just asked you what was the best location without considering the penalty factor issue?

A Oh, I'm sorry, without considering it.

Q Uh-huh.

A Well, I'm sorry, I must have -- I lost that.

Q All right. Your original application was for an unorthodox well location that would have put the well in the southwest of the southeast.

A That's correct.

Q My understanding of your presentation up to now is that the only factor that caused you to move that location up to the northwest of the southeast is to avoid a potential unorthodox location penalty if you stay at the unorthodox location.

A Essentially; not wholly. When we came up with it, when we proposed the original location, it was a balancing between what we felt we would encounter in all the Morrow zones, and of course the Atoka zones, and balancing all that together, we felt that the optimum location was that southwest southeast.

But like I say, there is a trade off in

there. We felt there was very good chance of seeing a net bank in that -- in that location, and that was going to act as a very good bail out zone from -- if we -- if we didn't have, you know, if we really lucked out in the Morrow.

But in the same instance, the Morrow C, I feel, is going to be better at our current location, our orthodox location, than the southwest -- southeast location.

Same with the Morrow A Sand, if you look at that map. In fact you can just add a couple of these maps for me to prioritize. But in terms of the Lower A Sand map, the best location is obviously in the northwest of the southeast, and if you look at -- that's Exhibit Eleven, by the way.

If you go back to Exhibit Seven, which is the C Sand map, and I had to rate that, I'd have to rate the northwest of the southeast as by far the best and these two are our primary objectives, the Morrow C and the Morrow A.

The reason we had that unorthodox location is purely because we felt by closeology and a known, or essentially what we felt was a known with that Atoka Bank, it will be a good bail out zone, but in the same instance, you know, we're trading off something else for that and we felt, you know, now after that we'd consider, recon-

sider it on the basis of the penalties and everything else, hey, why don't we, you know, these are our two primary objectives, go for the best location.

MR. KELLAHIN: Thank you, Mr. Examiner.

MR. STOGNER: Thank you , Mr. Kellahin.

Are there any other questions of this witness?

He may be excused.

Take about a five minute recess.

(Thereupon a recess was taken.)

MR. STOGNER: Mr. Padilla.

MR. PADILLA: Mr. Examiner, we'll call Jim Broten at this time.

JAMES RUSSELL BROTEN,

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

DIRECT EXAMINATION

BY MR. PADILLA:

Q Mr. Broten, for the record please state your full name.

A My name is James Russell Broten.

Q And where do you reside, Mr. Broten?

A Midland, Texas.

Q What do you do for a living?

A I'm a geologist. Presently I'm principally associated with Midland Phoenix Corporation.

Q Mr. Broten, have you previously testified before the Oil Conservation Division?

A Yes, sir, I have.

Q As what?

A As a petroleum geologist.

Q Have your credentials been accepted as a matter of record in those --

A Yes, they have.

Q -- in that testimony?

A Yes.

Q Mr. Broten, are you familiar with the geology in the proposed location as proposed by Midland Phoenix Corporation?

A Yes, sir, I am. I was, while with HNG, later to become Enron, I was a development geologist and

the project I was involved with was the development of this Pitchfork Field.

MR. PADILLA: Mr. Examiner, we tender Mr. Broten as a petroleum geologist.

MR. STOGNER: Any objection? Mr. Broten is so qualified.

Q Mr. Broten, let's look at what we have marked as Exhibit Number Fourteen and have you tell the Examiner what that is.

A Mr. Examiner, Exhibit Number Fourteen is a copy of a portion of the mud log reported on the well drilled in the east half of Section 34, the Moore 34 Com No. 1, and we have included a portion of the Pennsylvanian pay interval that we anticipate to be prospective within the east half of that said location, said section.

Q Mr. Broten, for what purpose do you seek to introduce this exhibit at this hearing today?

A This information off the mud log has encouraged Midland Phoenix to pursue this acreage and to drill a well in the east half because we feel that this well showed through the mud log shows that the northeast quarter is productive and we feel that the owners within that northeast quarter need to be protected by the drilling of a well in the east half proration unit.

Q Mr. Broten, would you explain, you have

highlighted certain information on that exhibit, have you not?

A Yes, sir.

Q And it's highlighted in yellow?

A Yes, sir. What I've highlighted was three zones of potential, primary potential, that was earlier rated through Mr. Dicey's testimony and if I may, I'd like to just go down and state the facts as the mud log records them and enter them into the record, beginning with the Atoka section and working downward to the Morrow C, ending with the Morrow C Sand.

Q Okay, go ahead and make -- do your explanation, Mr. Broten.

A First I'll start with the Atoka Sand interval.

Q And where is that in the mud log?

A Okay, that is at 14092 to 097, which correlates to 14078 to 083 from the CNL density.

Q And is that the first yellow highlighted information from the top on that log?

A Yes. What I've highlighted here was a note of sand and we see from the sample that a sand was noted all by -- being a trace, but a sand was noted as a very fine-grained, clear, quartzitic and glauconitic sand. The noting of it being quartzitic denotes the fact that it

was an unconsolidated sand which would fit our picture of what we expect in the -- in the Atoka Sand interval to be.

Going further, as a half employed and professional geologist working under the capacity as a mud logger for two years, I feel qualified, and I maybe am one of the most qualified people in this room to interpret this particular mud log.

When you see a sample denoted like this upon the mud log, often there's -- the mudlogger has a sample that he has collected, and this was a trip sample, so he has difficulty in pinpointing it and oftentimes what he will do is he will denote it as a trace and also prior to the collecting of the samples, you have problems with the collecting, if you've been on the wellsite, the screens on the shakers oftentimes a very fine, unconsolidated sand will not be collected by the mudlogger and therefore you have a problem with the collection of the sample. So the samples actually become, instead of computative, become qualitative, and that's just with all mud logs, that's a standard procedure. That's just a normal fact of life on a well, especially when they do not circulate samples up during a trip.

Now, I'd like to go into all the zones of interest and then from there just basically go through the exhibit, stating the facts from the mud log itself, but

basically highlighting the zones of interest, that Midland Phoenix is interested in and should be entered into the record.

And continuing with this Atoka Sand interval, the only negative factor we see here, if we look to the sample log itself, is the lack of a show, which does not disqualify the northeast quarter, by no means, from a productive reservoir being present.

Many wells in New Mexico have offset "dry" holes; in fact, operators have re-entered old HNG-Enron Wells and made existing wells out of what's been considered dry holes, so I don't believe that is a point at issue here.

We're just (unclear) the fact that we do have a sample and we believe that we have an enhanced place to drill and our maps reflect that in prior exhibits.

Proceeding on down to the next interval of interest would bring us to the mud log zone at 14614 to 642, which correlates to 14598 to 627 on the CNL density.

We see there that this -- this is the interval we call the Morrow A Sand and we have off the CNL density porosities of up to 20 percent on the density and average 12 plus porosity of 14 percent with resistivities in the neighborhood of approximately 35 ohms.

This -- these factors right here show

reservoir potential.

The mud log goes further than that and denotes a drilling break from 40 minutes per foot to 2 minutes per foot, indicating porosity as well as the electric log.

The well, in fact, was shut in during drilling for 30 minutes; it recorded a 15 barrel gain along with a 20 to 30 foot flare, estimating 2-million cubic feet of gas per day on the pitot tube for a projected volume.

They're drilling with brine and they increased the brine weight 10.7 to continue drilling. The samples themselves reflect a climbing upward sequence of very coarse to a very fine grained angular to sub-rounded sand, unconsolidated to partly consolidated, with residue staining on the sand grains. Also of note, condensate was observed on the mud stick. This denotes a very, very strong show, and as you're well aware, in New Mexico you get a show like this one from the Morrow is very encouraging and you believe you have a reservoir; in fact, frequently you do.

At this point in time when drilling was resumed, the samples were passed through a separator to knock out any gas in the brine so that we carried from this point on a steady 6-to-10 foot flare. Later this interval was production tested at 14606 to 625. It was perforated

with 20 holes, acidized with 4000 gallons, and in deed it flowed 1.75-million cubic feet of gas per day, decreasing to 100 to 200 MCF of gas per day.

At that point in time it was declared uneconomical and no further testing, and a bridge plug was set for an additional uphole attempt.

We feel that that zone was not adequately evaluated, and that's another reason why we feel we have a location to drill in the east half.

Another zone of interest would at 14740 to 744 on the mud log. It correlates to 14728 to 732 on the electric logs, excuse me, the CNL density.

Here we see porosities up to 10 percent with cross plot porosities in the neighborhood of 6 percent. Again we see resistivities in the range of 35 ohms. We call this equivalent to the Warren Sand. Here we see while drilling behind the separator, we increased the flare from 6-to-8 foot to 10-to-20 foot and the density logs reflected a good, good-looking zone, so we feel like we have potential here in the Warren Sand. In fact, the samples reflect a very fine-grained consolidated sand, also subangular to rounded, partially glauconitic.

Q What does that mean. partially glauconitic?

A That's an indication of the environment

of deposition. Glauconite is -- is member of the mica family. It's authigenic mineral often associated with marine sediments, and it's seen in the samples as unsually bright green.

This zone was not production tested, we further know.

Q Mr. Broten, what you're leading up to is that all of the prospective zones that Midland Phoenix is going to look at in drilling the proposed well, have not been condemned by the well in --

A We feel the Moore 34 is a -- is not condemning the location. In fact it's confirming the fact that there is potential for production within the immediate area.

Q Well, can you tell us why that well was -- in your opinion why it was abandoned?

A Well, this was at a point in time when we were still, as referred to earlier, in the baby stage of the learning curve in the ranch -- Pitchfork Ranch Field development, excuse me, and we were basically flying blind at the time and we oftentimes were too hasty in some of our evaluations, and I believe this gives us -- this is an example of that.

Q Did the mud have anything to do with the way you were drilling the well or anything with the Morrow

formation?

A (Inaudible) when the well was TD'd. Carrying on in that same vein, we note that at that point, I'll refer to it on the mud log as 15220 to 272, correlating to a CNL density at 15196 to 248. We see that within that sand interval --

Q You're talking about what sand interval?

A I'm sorry, the Morrow Sand series.

Q The Morrow, okay.

A C Sand. We see that we took a strong, strong gas show while drilling. The well was shut in. They experienced 1400 to 1600 pounds, which increased later to 2200 pounds on the back side. Meanwhile they were circulating gas through the choke at a 2.2 to 2.4-million cubic feet per gas rate, per day, I'm sorry. At this point they were displacing. We note that as they get back to drilling, even with this heavy mud they are still carrying a flare that's still going through the separator and they began to add lost circulation material due to the fact that they began to experience circulation problems.

Our contention here is we don't know where that lost circulation material was in fact going , so we feel that there is a potential that all the exposed zones have a possibility of being damaged from this lost circulation material, which would later affect the produc-

tion test and/or as well as the C Sand itself, possibly.

Q Is the Morrow formation a sensitive formation in this area?

A Absolutely. In fact, while with HNG we ran FCM work, which is (unclear) it's electron microscope work on samples. I can't say the word, but the slang is FCM work, and at that point we had information as to how sensitive this Morrow is in this immediate area, and that's -- that was post -- that was post information to the drilling of this well. We didn't have that information prior to this well being drilled.

Q How would you complete a well now into the Morrow formation in terms of what kind of mud program would you use, knowing what you know now?

A Well, always to be under balanced whenever possible, and that's in fact what we try to reflect in our AFE, is to be under balanced as much as possible whenever we encounter these Morrow sands and to case off the higher pressure zones to protect the integrity of the lower pressured sands.

Q Does the size of the hole down at -- have anything to do with that?

A I feel they were -- they were operating in a handicapped situation as a 4-3/4 hole is a production engineer's nightmare as far as getting a -- they'd rather

have a larger hole to work with. They'd rather have a larger hole but it is not impossible to complete a well if procedures are taken to protect those individual sands.

So I'd say to you it's not -- it can be a factor if not handled properly but it's -- if handled properly, the 4-3/4 hole would not be a problem.

Q Okay. I don't think you answered my question in terms of mud itself, --

A Oh, I'm sorry.

Q -- how would you handle the mud in the Morrow at this time?

A If -- if we encountered a similar show within the C Sand, we would basically try to get that -- first off we'd have the upper zones already cased off most likely. It depends, we've got several different scenarios that potentially may happen out here, and it depends on what scenario we are faced with when we reach the C Sand.

Q But you do want to --

A We would -- we would protect the integrity of the sand by whatever possible means we could.

Q But would you --

A Absolutely.

Q -- would you use mud to control the well like --

A We would -- I tell you what, we wouldn't